Owner's Guide
and
Installation Instructions

Rheem Tankpak Series 2
Commercial Hot Water Systems

Install a Rheem

This water heater must be installed and serviced by a qualified person.
Please leave this guide with a responsible officer.

Please read this manual prior to installing this product, it contains all the necessary technical and installation information that will be required by the contactor to correctly install & commission this system. This product must be installed & commissioned in accordance with the Rheem installation instructions, AS/NZS 5601, AS/NZS 3500.4, the relevant electrical & local authorities' requirements.

PATENTS

This water heater may be protected by one or more patents or registered designs.
Operation design of the Hot Water System is protected by Australian Patent No 2007201101
® Registered trademark of Rheem Australia Pty Ltd.

CONTENTS

RESPONSIBLE OFFICER - We recommend you read pages 4 to 13.
The other pages are intended for the installer but may be of interest.

Contents **3**

About your water heater **4**

Water Supplies **9**

Save A Service Call **12**

Tankpak – Technical Specifications **14**

Installation – water heater **16**

Connections – Plumbing **26**

Connections – flueing **32**

CONNECTIONS - Electrical **49**

Commissioning **51**

Rheem Continuous Flow Gas Water Heater Warranty – Australia Only **63**

ABOUT YOUR WATER HEATER

DESCRIPTION

Rheem Tankpak Series 2 combines the benefits of mains pressure and continuous flow water heating. Manifolded banks of continuous flow water heaters (CFWH) meet the peak demand requirements whilst the storage tank provides buffer for peak simultaneous demands.

A controller is used to control the CFWH by sensing the temperature within the storage tank and controlling a pump which in turn causes the CFWH to fire or cease firing.

The Rheem Tankpak Series 2 is a bank of 2 to 18 continuous flow water heaters factory manifolded in parallel. All components are factory assembled on a galvanised frame suitable for either wall or floor mounting.

This water heater is designed for the purpose of heating potable water. Its use in an application other than this may shorten its life.

Depending on model the Rheem Tankpak Series 2 is suitable for:

- Outdoor or indoor installation
- Natural Gas or Propane (LPG)
- Wall or floor mounting
- Inline or back to back installation (model dependant)

The Rheem Tankpak Series 2 is a fully engineered system, completely factory assembled, requiring only minimal on-site work to be completed, as detailed below:

1. Installation & service connections to the package.
    a) Gas in
    b) Cold water in
    c) Interconnection of storage tank/s (supplied separately)
    d) Hot water out
    e) Co-axial flueing for individual internal water heaters (supplied separately)
    f) Building return circulator (supplied separately)
    g) 240V/1Ph/50Hz 10-30A power supply to the package (model dependant)
2. Final commissioning (refer to page 51).

WATER HEATER OPERATION

Automatic safety controls are fitted to the water heater to provide safe and efficient operation.

HOW HOT SHOULD THE WATER BE?

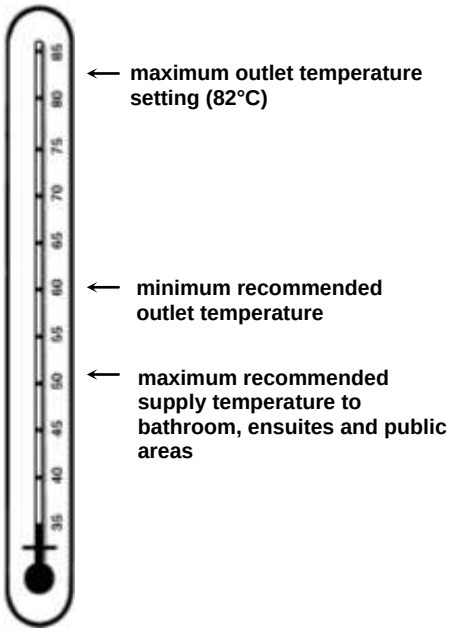
The water heater is factory supplied pre-set to deliver 65°C and has a maximum preset outlet temperature setting of 82°C. For applications requiring sanitising temperatures, the outlet temperature should be set at 82°C. The minimum recommended preset outlet temperature setting is 60°C.

If the water heater is installed as part of a circulated hot water flow and return system in a building, the preset outlet temperature setting of the water heater must be set to at least 60°C.

Note: The preset outlet temperature setting of this water heater cannot be adjusted by a building occupant. The setting can only be adjusted by the installer, Rheem Service or their nearest Accredited Service Agent.

Note: AS 3498 requires that a water heater provides the means to inhibit the growth of Legionella bacteria in potable water. When this water heater is used as an in-series booster for a solar water heater it can satisfy this AS 3498 requirement provided it is energised and the booster preset outlet temperature setting is 70°C or higher.

If this water heater is installed as part of a solar water heater system, the system can deliver water at temperatures from 58°C up to 75°C and possibly higher depending upon the model of solar water heater installed.



HOTTER WATER INCREASES THE RISK OF SCALD INJURY

This water heater can deliver water at temperatures which can cause scalding.

We recommend and it may be required by regulations that an approved temperature limiting device be fitted into the hot water piping to ablution, bathing and public areas when a Tankpak Series 2 water heater is installed. This will keep the water temperature below the maximum permitted by AS/NZS 3500.4 to these areas.

SAFETY

Warning: For continued safety of this water heater it must be installed, operated and maintained in accordance with the Owner's Guide and Installation Instructions.

The Rheem warranty may not cover faults if relief valves or other safety devices are tampered with or if the installation is not in accordance with these instructions.

The water heater uses 240 Volt AC electrical power for operation of the control systems, pump and the combustion fan. The removal of the front panel of the water heater, pump or controller will expose 240 V wiring. It must only be removed by a qualified person.

The power lead from the water heater must be plugged into a weatherproof electrical outlet. Take care not to touch the power plug with wet hands.

This water heater is supplied with temperature sensors, a FlameSafe® protection system and a pressure relief valve. These devices must not be tampered with or removed. The water heater must not be operated unless each of these devices is fitted and is in working order.

If the power supply cabling cord, or plug is damaged, it must be replaced by a qualified person in order to avoid a hazard. The power supply cord and plug must be replaced with a genuine replacement part available from Rheem. Phone Rheem Service or their nearest Accredited Service Agent to arrange for an inspection.

- Do not store **flammable or combustible materials** near the water heater. Flammable liquids (such as petrol), newspapers and similar articles must be kept well away from the water heater and the flue terminal.
- Do not use **aerosols, stain removers and household chemicals** near the water heater whilst it is working. Gases from some aerosol sprays, stain removers and household chemicals become corrosive when drawn into a flame.
- Do not store **swimming pool chemicals, household cleaners,** etc., near the water heater.
- Do not place anything on top of the water heater or in contact with the flue terminal. Ensure the flue terminal is not obstructed in any way at any time.

- Do not use Propane / Butane gas mixtures in a Propane model. A Propane model is designed to operate on Propane only. The use of Propane / Butane mixture, such as automotive LPG fuel, in a Propane model is unsafe and can cause damage to the water heater.

PRECAUTIONS

Where damage to property can occur in the event of the water heater leaking, the water heater must be installed in a safe tray. Construction, installation and draining of a safe tray must comply with AS/NZS 3500.4 and all local codes and regulatory authority requirements.

The water heater must be maintained in accordance with the Owner's Guide and Installation Instructions. Refer to "General Maintenance" on page 6, "Minor Six Month Maintenance" on page 6 and "Annual Service" on page 7.

If this water heater is to be used where an uninterrupted hot water supply is necessary for your application or business you should ensure that you have redundancy within the hot water system design. This should ensure the continuity of hot water supply in the event that this water heater was to become inoperable for any reason. We recommend you seek advice from your plumber or specifier about your needs and building redundancy into your hot water supply system.

GENERAL MAINTENANCE

The jacket of the water heater and controller can be cleaned with a soft cloth and warm mild soapy water. Under no circumstances should abrasive materials or powders be used.

The area around the water heater can be sprayed with insecticide to rid the area of insects. Insects encroaching into or nesting in the water heater can interfere with the operation of the water heater and also damage components.

The minor maintenance includes:

Inspect around the air inlet, flue terminal and the water heater in general for plant growth.

- Trim back any shrubs, bushes or other plants which have encroached around the water heater.
- Plant growth across the air let and flue terminal can interfere with the performance of the water heater.
- Inspect around the water heater for insect infestations, such as ants.
- Spray insecticide around the water heater if necessary to rid the area of insects. Do not spray the surface or into the air inlet or flue terminal of the water heater.
- Insects encroaching into or nesting in the water heater can interfere with the operation of the water heater and also damage components.
- Check the drain line from the safe tray (if one is installed) is not blocked.
- Check and clean filter on CFWH cold water inlet (and line strainer on Deluxe models).

MINOR SIX MONTH MAINTENANCE

It is recommended minor maintenance be performed every six months by the responsible officer.

The minor maintenance includes:

Inspect around the air inlet, flue terminal and the water heater in general for plant growth.

- Trim back any shrubs, bushes or other plants which have encroached around the water heater.

  Plant growth across the air let and flue terminal can interfere with the performance of the water heater.

- Inspect around the water heater for insect infestations, such as ants.
- Spray insecticide around the water heater if necessary to rid the area of insects. Do not spray the surface or into the air inlet or flue terminal of the water heater.

  Insects encroaching into or nesting in the water heater can interfere with the operation of the water heater and also damage components.

- Check the drain line from the safe tray (if one is installed) is not blocked.

- Check and clean filter on CFWH cold water inlet and line strainer (deluxe models).
- Operate the easing lever on the temperature pressure relief valve on the storage tank. It is very important you raise and lower the lever gently. Refer to Rheem Storage Tank Owners Guide and Installation Instructions.

ANNUAL SERVICE

For safe and efficient operation, it is recommended an annual service be conducted on the water heater. Only genuine replacement parts should be used on this water heater.

Warning: Servicing of a water heater must only be carried out by qualified personnel. Phone Rheem Service or their nearest Accredited Service Agent.

The annual service includes the following actions:

- Check and if necessary adjust the gas pressure.
- Check the operation of and clean the burner.
- Visually check the unit for any potential problems.
- Inspect all connections.
- Check the drain line from the safe tray (if one is installed) is not blocked.
- Check and clean line strainers on the cold water inlet (deluxe model).
- Check and clean filter on CFWH cold water inlet.

TO TURN OFF THE WATER HEATER

If it is necessary to turn off the water heater on completion of the installation, such as on a building site or where the premises are vacant, then:

- Switch off the electrical supply at the isolating switch to the Tankpak (refer to note below).
- Close the gas isolation valve at the inlet to the Tankpak.
- Close the cold water and hot water flow isolation valves at the inlet and outlet of the Tankpak
- Close the isolation valves on the inlet and outlet at the storage tank(s).
- Drain each CFWH if there is a risk of freezing conditions occurring (refer to “Draining The Water Heater” on page 8).

Note: If there is a risk of freezing conditions, the electrical supply to the water heater should not be switched off unless the water heater is drained, otherwise damage could result (refer to “Frost Protection” on page 8 and “Draining the Water Heater” on page 8).

TO TURN ON THE WATER HEATER

- Screw in the drain plugs at the cold water inlet and hot water outlet of the CFWH if they have been drained.
- Open all of the hot taps (don’t forget the shower).
- Open the cold water and hot water isolation valve fully at the inlet and outlet to the water heater.
- Open the isolation valves on the storage tanks.

  Air will be forced out of the taps.
- Close each tap as water flows freely from it.
- Open the gas isolation valve fully at the inlet to the water heater.
- Switch on the electrical supply at the circuit breaker isolating switch.
- The water heater will operate automatically.

FROST PROTECTION

The water heater has a frost protection system. The frost protection system will protect the water heater from damage, by preventing ice forming in the waterways of the water heater, in the event of freezing conditions occurring.

Notes:

- The frost protection system will be rendered inoperable if electrical power is not available at the water heater. Damage caused by freezing due to the unavailability of power at the water heater is not covered by the Rheem warranty (refer to "Terms of the Rheem Warranty" on page 64).
- If it is necessary to switch the power off to the water heater and there is a risk of freezing, then it is necessary to drain the water heater (refer to "Draining the Water Heater" on page 8).
- The water heater is not suitable for installation in areas where the ambient temperature falls below -20°C (including wind chill factor). Refer to "Terms of the Rheem Warranty" on page 64.

DRAINING THE WATER HEATER

To drain the water heater:

- Turn off the water heater (refer to "Turn Off The Water Heater" on page 7).
- Unscrew the two drain plugs, one each at the cold water inlet and hot water outlet, on the underside of each continuous flow water heater.

  Water will drain from the water heaters.

Note: It is recommended not to screw the drain plugs back in, until the water heater is to be turned on again.

TO DRAIN THE STORAGE TANK:

- Close isolation valve on inlet and outlet of storage tank.
- Operate the relief valve release lever - do not let the lever snap back or you will damage the valve seat.
- Operating the lever will release the pressure in the storage tank.
- Undo the union at the cold water inlet to the storage tank and attach a hose to the storage tank side of the union.
- Let the other end of the hose go to a drain.
- Operate the relief valve again.
- This will let air into the storage tank and allow the water to drain through the hose.

HOW DO I KNOW IF THE WATER HEATER IS INSTALLED CORRECTLY?

Installation requirements are shown on pages 16 to 50. The water heater must be installed:

- by a qualified person, and
- in accordance with the installation instructions, and
- in compliance with Standards AS/NZS 3500.4, AS 3000, AS/NZS 5601 or AS/NZS 5601.1, as applicable under local regulations, and all local codes and regulatory authority requirements.

DOES THE WATER CHEMISTRY AFFECT THE WATER HEATER?

The water heater is suitable for most public water supplies, however some water chemistries may have detrimental effects on the water heater, its components and fittings. Refer to "Water Supplies" on page 9.

If you are in a known harsh water area or you are not sure of your water chemistry, have your water checked against the conditions described on page 9.

HOW LONG WILL THE WATER HEATER LAST?

The water heater is supported by a manufacturer's warranty (refer to page 63). There are a number of factors that will affect the length of service the water heater will provide. These include but are not limited to the water chemistry, the water pressure, the water temperature (inlet and outlet) and the water usage pattern. Refer to "Precautions" on page 6.

WATER SUPPLIES

This water heater must be installed in accordance with this advice to be covered by the Rheem warranty.

This water heater is manufactured to suit the water conditions of most public reticulated water supplies. However, there are some known water chemistries which can have detrimental effects on the water heater and its operation and / or life expectancy. If you are unsure of your water chemistry, you may be able to obtain information from your local water supply authority. This water heater should only be connected to a water supply which complies with these guidelines for the Rheem warranty to apply.

CHANGE OF WATER SUPPLY

The changing or alternating from one water supply to another can have a detrimental effect on the operation and / or life expectation of a heat exchanger in a continuous flow water heater and a temperature pressure relief valve in a storage tank cylinder.

Where there is a changeover from one water supply to another, e.g., a rainwater tank supply, bore water supply, desalinated water supply, public reticulated water supply or water brought in from another supply, then water chemistry information should be sought from the supplier or it should be tested to ensure the water supply meets the requirements given in these guidelines for the Rheem warranty to apply.

SATURATION INDEX

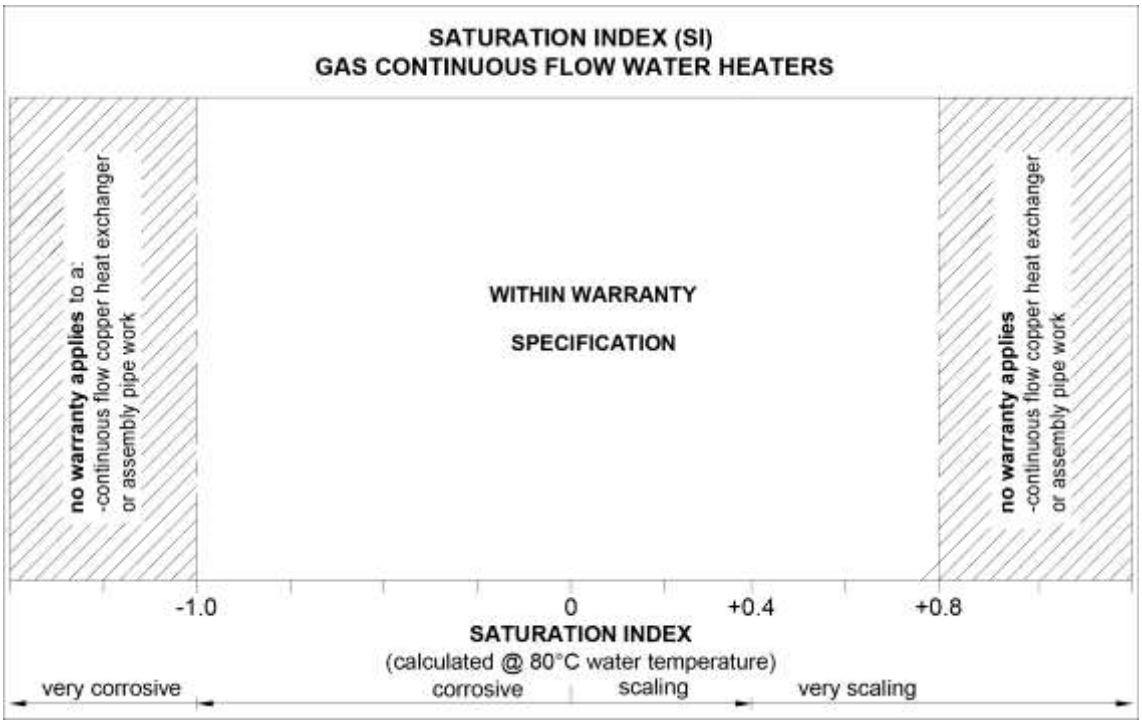
The saturation index (SI) is used as a measure of the water's corrosive or scaling properties.

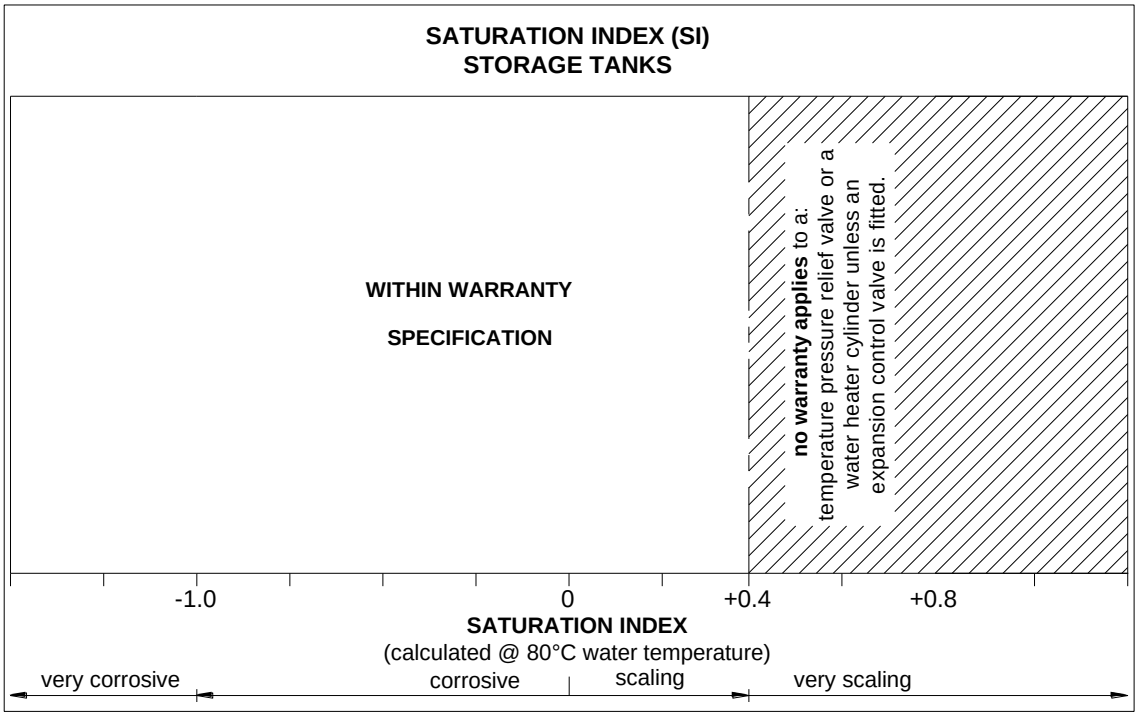
In a corrosive water supply, the water can attack copper parts and cause them to fail. Where the saturation index is less than –1.0, the water is very corrosive and the Rheem warranty does not apply to a copper heat exchanger in a continuous flow water heater or the copper pipe work in the Tankpak assembly.

In a scaling water supply calcium carbonate is deposited out of the water onto any hot metallic surface. Where the saturation index exceeds +0.40, the water is very scaling. An expansion control valve must be fitted on the cold water line after the non-return valve to protect and for the Rheem warranty to apply to the temperature pressure relief valve and storage tank cylinder.
Where the saturation index exceeds +0.80, the Rheem warranty does not apply to a copper heat exchanger in a continuous flow water heater or the copper pipe work in the Tankpak assembly

Water which is scaling may be treated with a water softening device to reduce the saturation index of the water.

Refer to the Saturation Index chart on page 9.





ANODE

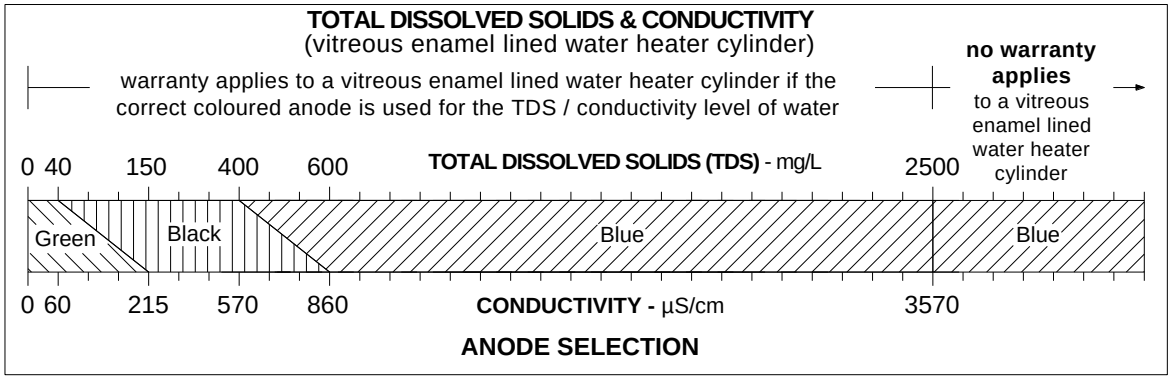
The vitreous enamel lined cylinder of the storage tank is only covered by the Rheem warranty when the total dissolved solids (TDS) content in the water is less than 2500 mg/L and when the correct colour coded anode is used. If an incorrect colour coded anode is used in the storage tank, any resultant faults will not be covered by the Rheem warranty. In addition, the use of an incorrect colour coded anode may shorten the life of the storage tank cylinder.

The correct colour coded anode must be selected and fitted to the storage tank in accordance with the following advice and the Anode Selection chart on page 10 for the Rheem warranty to apply to the storage tank cylinder.

Total Dissolved Solids	Anode colour code
0 – 40 mg/L	Green
40 – 150 mg/L	Green or Black
150 – 400 mg/L	Black
400 – 600 mg/L	Black or Blue
600 – 2500 mg/L	Blue
2500 mg/L +	Blue (no cylinder warranty)

The changing of an anode must be carried out by a qualified person.

Note: Some water analysis reports may state the conductivity of the water rather than the level of total dissolved solids. Conductivity, measured in microsiemens per centimetre (μS / cm), is directly proportional to the TDS content of the water. TDS, in mg / L, is approximately 70% of the conductivity in μS / cm.


TOTAL DISSOLVED SOLIDS & CONDUCTIVITY
(vitreous enamel lined water heater cylinder)
warranty applies to a vitreous enamel lined water heater cylinder if the correct coloured anode is used for the TDS / conductivity level of water
no warranty applies to a vitreous enamel lined water heater cylinder
0 40 150 400 600
TOTAL DISSOLVED SOLIDS (TDS) - mg/L
2500
Green
Black
Blue
Blue
0 60 215 570 860
CONDUCTIVITY - µS/cm
3570
ANODE SELECTION

SUMMARY OF WATER CHEMISTRY ADVICE AFFECTING WARRANTY

The water heater storage tank and its components (the system) are not suitable for certain water chemistries. Those chemistries are listed below. If the system is connected at any time to a water supply with the following water chemistry, the Rheem warranty will not cover any resultant faults on the components listed below:

Water Chemistry	Component
Total Dissolved Solids (TDS) > 2500 mg/L	storage tank cylinder
Total Dissolved Solids (TDS) not suitable for anode type	storage tank cylinder
Saturation Index (SI) < -1.0	water heater
Saturation Index (SI) > +0.4 (if an expansion control valve is not fitted)	storage tank cylinder temperature pressure relief valve
Saturation Index (SI) > +0.8	water heater
Chloride > 250 mg/L	water heater
pH < 6.0	water heater

CHLORIDE AND PH

Where the chloride level exceeds 250 mg/L the Rheem warranty does not apply to the water heater. In a high chloride water supply, the water can corrode stainless steel parts and cause them to fail.

Where the pH is less than 6.0 the Rheem warranty does not apply to the pump of the Tankpak water heater. pH is a measure of whether the water is alkaline or acid. In an acidic water supply, the water can attack stainless steel parts and cause them to fail.

Water with a pH less than 6.0 may be treated to raise the pH. The water supply from a rainwater tank in a metropolitan area is likely to be corrosive due to the dissolution of atmospheric contaminants.

SAVE A SERVICE CALL

Check the items below before making a service call. You will be charged for attending to any condition or fault, which is not related to manufacture or failure of a part (refer to "Terms of the Rheem Warranty" on page 64).

COLD WATER FROM THE HOT TAP

- Allow 15 minutes from start up to ensure an uninterrupted supply of hot water
- Is the Tankpak wired to a power supply and the isolating switch turned on?
- Are the CFWHs plugged in and the power outlet switched on?
- Are the cold water inlet filters clear?
- Is power available in the premises?

  Try using another electrical appliance.
- Is the isolation valve in the gas line open?
- Is there a gas supply to the rest of the premises?

  Try lighting another gas appliance.
- Has the gas line been purged of air after installation?

  Refer to your plumber.

WATER IS TOO HOT OR NOT HOT ENOUGH

- Is the preset outlet temperature of the water heater higher or lower than required?

NO WATER FROM THE HOT TAP

No flow of water from the hot tap may indicate a restriction in or failure of the cold water supply to the water heater. Check for water flow at other taps and that the cold water isolation valve is fully open.

WATER TEMPERATURE FLUCTUATES

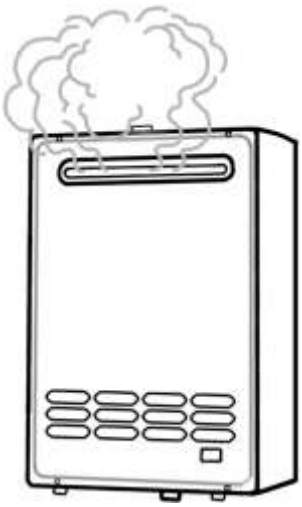
This can be evident if the water heater has been installed as an in-series gas booster to a solar water heater. Also, under certain flow conditions water will be delivered preferentially from the storage tank or continuous flow water heaters. A slight variation in temperature may be sensed.

FAN CONTINUES TO RUN AFTER WATER HEATER OPERATION STOPS

It is the normal operation of the water heater for the fan to continue running after heating of the water is finished. The fan may run for up to six minutes after the burners extinguish, to prepare for the next ignition.

CLOUDS OF WHITE 'VAPOUR' FROM THE FLUE TERMINAL

During the heating cycle, it is not unusual to see water vapour clouds steaming from the flue terminal, particularly on cold days. This is normal operation of the water heater.



PRESSURE RELIEF VALVE DISCHARGING

A pressure relief valve is incorporated into the continuous flow water heater controls. This valve protects the water heater, by allowing water to escape, in the event of excessive pressure build up in the waterways.

- **Normal operation**
  A small volume of water may discharge from the bottom of the water heater when a hot tap is suddenly closed.
- **Continuous dribble**
  A continuous dribble may indicate the water supply pressure is above

the design pressure for the water heater. If so, a pressure limiting valve must be installed on the cold water supply pipe to the water heater (refer to “Mains Water Supply” on page 27.

Refer to Owners Guide and Installation instructions of the storage tank for issues relating to Temperature & Pressure Relief Valve and Expansion Control valve.

ERROR CODE

The water heater provides a diagnostic error code in the event of an interruption to its operation. The error code is displayed on the OK MONITOR on the front of the water heater as a numerical value. If an error code appears:

- Close the isolation valve on the water heater and switch off the electrical supply to the water heater.
- Check the gas isolation valve at the gas inlet to the water heater is fully open.
- Wait 5 minutes, then switch on the electrical supply to the water heater, and open a hot tap.

If the error code persists, take note of the numerical code, turn off the isolating valve on the hot outlet of the water heater in question. Phone Rheem Service or their nearest Accredited Service Agent to arrange for inspection.

IF YOU HAVE CHECKED ALL THE FOREGOING AND STILL BELIEVE YOU NEED ASSISTANCE, PHONE RHEEM SERVICE OR THEIR NEAREST ACCREDITED SERVICE AGENT

TANKPAK SERIES 2– TECHNICAL SPECIFICATIONS

SKID PACKAGE COMPRISING OF:

RHEEM WATER HEATERS

- Two (2) to eighteen (18) Rheem Continuous Flow Water Heaters (CFWH)
- Mounted and plumbed in parallel on a galvanised steel frame
- 2-9 may be wall mounted or floor mounted inline
- 4-18 may be floor mounted back to back

PLUMBING DETAILS

- Cold water inlet and hot water outlet piping, valves and fittings to AS3500.4. All plumbing components are WaterMark certified.
- Line strainer fitted to inlet of primary pump (Deluxe models)
- Gas piping and fittings to AS5601.1
- Insulation- foil faced closed cell on hot and cold manifolds

ELECTRICAL DETAILS

- 10-30 AMP 240V AC 50Hz single phase power supply required to package (model dependant)
- IP54 electrical enclosure
- GPO’s encased in water proof enclosure (Deluxe models)
- Pump wired to controller
- Models up to 7 CFWH may be connected to a 10 Amp general purpose outlet (plug and lead supplied). Models containing 8 or more CFWH must be hard wired.

Model	No of Units	Thermal Input (MJ / h)	Recommended Storage Model[2]	Recovery @ 50°C rise (L/hr)	First Hour Capacity (L)[4]	Mounting Options[3]	Width (mm) Wall and Floor / Back to Back	Height	Depth (mm) Wall / Floor and Back to Back	Weight (kg) Wall and Floor / Back to Back[1]	Primary Flow and Return Pipe Size (mm)	Pump Model	Max Water supply Pressure[4] with ECV / without ECV (kPa)	Gas Pipe Size(mm)	Electrical Supply (240V/1Ph/50Hz) Max Current Running (Amps)
TPE02/TPI02	2	410	610340/610430	1645	1970/2055	W/F	1132	1625	360/600	150	40	CM 3-2	680/800	40	4.0
TPE03/TPI03	3	615	610340/610430	2470	2795/2880	W/F	1132	1625	360/600	176	40	CM 3-2	680/800	40	4.8
TPE04/TPI04	4	820	610340/610430	3290	3615/3700	W/F/B	1495/ 1132	1625	360/600	216 / 206	40	CM 3-2	680/800	50	5.5
TPE05/TPI05	5	1025	1 x 610430	4115	4525	W/F/B	2239/ 1132	1625	360/600	298 / 237	40	CM 5-2	680/800	50	7.0
TPE06/TPI06	6	1230	1 x 610430	4935	5345	W/F/B	2239/ 1132	1625	360/600	330 / 268	40	CM 5-2	680/800	50	7.8
TPE07/TPI07	7	1435	1 x 610430	5760	6170	W/F/B	2965/ 1495	1625	360/600	387 / 311	50	CM 5-2	680/800	50	8.6
TPE08/TPI08	8	1640	2 x 610430	6580	7400	W/F/B	2965/ 1495	1625	360/600	423 / 347	50	CM10-1	680/800	65	10.6
TPE09/TPI09	9	1845	2 x 610430	7405	8225	W/F/B	3346/ 2239	1625	360/600	497 / 429	50	CM10-1	680/800	65	11.4
TPE10/TPI10	10	2050	2 x 610430	8225	9045	B	2239	1625	600	459	50	CM10-1	680/800	65	12.2
TPE12/TPI12	12	2460	3 x 610430	9875	11105	B	2239	1625	600	527	50	CM10-1	680/800	80	14.8
TPE14/TPI14	14	2870	3 x 610430	11520	12750	B	2965	1625	600	611	65	CM10-1	680/800	80	15.5
TPE16/TPI16	16	3280	3 x 610430	13165	14395	B	2965	1625	600	672	65	CM10-1	680/800	80	16.9
TPE18/TPI18	18	3690	3 x 610430	14810	16040	B	3346	1625	600	776	65	CM10-1	680/800	80	18.5

[1] excludes tank. internal model shown. subtract 4kg per CFWH for external model

[2] tank capacity 610340 is 325L, 610430 is 410L

[3] W = Wall mount, F = Floor mount, B = Back to back

[4] Rheem 610 series storage tanks

INSTALLATION – WATER HEATER

THIS WATER HEATER IS FOR OUTDOOR OR INDOOR INSTALLATION, MODEL DEPENDANT.
THIS WATER HEATER IS NOT SUITABLE FOR POOL HEATING.
Check the water heater is suitable for the gas type available.
(refer to the rating label on the water heater)

INSTALLATION STANDARDS

The water heater must be installed:

- by a qualified person, and
- in accordance with the installation instructions, and
- in compliance with Standards AS/NZS 3500.4, AS 3000, AS/NZS 5601 or AS/NZS 5601.1, as applicable under local regulations, and all local codes and regulatory authority requirements.
- In New Zealand the installation must also conform with NZS 5261, as applicable under local regulations, and the New Zealand Building Code.

All packaging materials must be removed from the water heater prior to its installation.

WATER HEATER APPLICATION

This water heater is designed for the purpose of heating potable water. Its use in an application other than this may shorten its life.

If this water heater is to be used where an uninterrupted hot water supply is necessary for the application or business, then there should be redundancy within the hot water system design. This should ensure the continuity of hot water supply in the event that this water heater was to become inoperable for any reason. We recommend you provide advice to the system owner about their needs and building redundancy into the hot water supply system.

Note: AS 3498 requires that a water heater provides the means to inhibit the growth of Legionella bacteria in potable water. When this water heater is used as an in-series booster for a solar water heater it can satisfy this AS 3498 requirement provided it is energised and the booster preset outlet temperature setting is 70°C or higher.

WATER HEATER LOCATION

The water heater should be installed in a position chosen with safety and service in mind. If this water heater is part of a solar water heater system, it should also be installed close to the solar storage tank. Make sure people (particularly children) will not touch the flue terminal. The flue terminal and air inlet must be clear of obstructions and shrubbery.

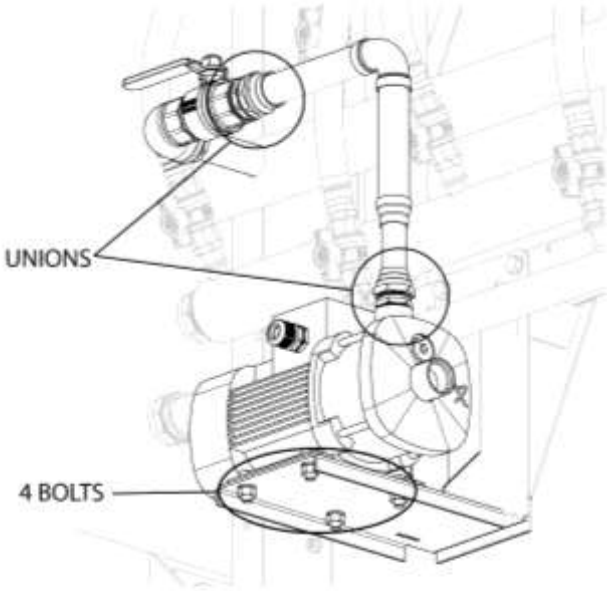
Clearance must be allowed for servicing of the water heater. The water heater must be accessible without the use of a ladder or scaffold. Make sure the entire front panel can be removed for service. You must be able to read the information on the rating plate. Remember you may have to remove a water heater later for servicing.

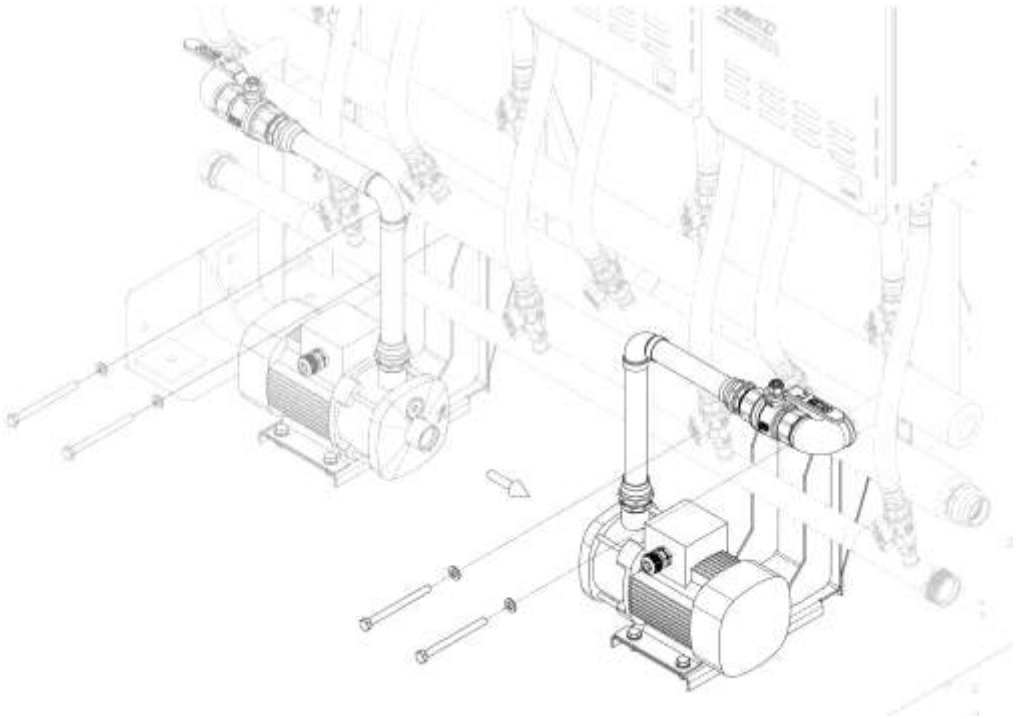
The water must be installed vertically upright. Wall mounted versions must be installed on a solid wall capable of supporting the weight of the Tankpak system. Free standing versions can be mounted in any location on a solid base. The frame must be secured to the floor at all anchor points provided, refer to page 22.

The water heater must not be installed in an area with a corrosive atmosphere, where chemicals are stored or where aerosol propellants are released. Remember the air may be safe to breathe, but when it goes through a flame, chemical changes take place which may attack the water heater.

TRANSFERRING PUMP FROM LEFT HAND SIDE TO RIGHT HAND SIDE

1. Remove branch assembly by unscrewing the unions
2. Remove the 4 bolts securing the pump to the bracket
3. Remove the 2 bolts securing the bracket to the unit frame
4. Remove the elbow/isolation valve assembly from the left hand side branch and remove the brass cap from the right hand side branch
5. Relocate the bracket on the right hand side of the unit with the 2 bolts
6. Rotate the pump and secure with the 4 bolts to the newly positioned bracket
7. Fit the elbow/isolation valve assembly to the right hand side branch using thread sealant. Orientation is to be the mirror image of the original position
8. Reposition the pump branch assembly to complete installation





DISASSEMBLY

The Rheem Tankpak Series 2 has been designed to allow for on-site disassembly to enable the system to be positioned into otherwise inaccessible locations where it can be re-assembled.
By following these instructions, a suitably qualified tradesperson can proceed and complete the necessary work required. In most cases electrical trades are not required for this procedure to be carried out.
Disassembly is not covered by the Rheem warranty. Rheem cannot accept any responsibility for the cost of repair or rectification if this procedure has not been followed.
WARNING: To avoid rain ingress via the flue terminals causing potential water damage to internal components, do not leave the gas units in an exposed location for any length of time during the disassembly and reassembly procedure.

1. Disconnect continuous flow water heaters (gas units) from the cold, hot and gas flexible hose connections.

2. For a Deluxe model, unplug the power cords from the GPO sockets.

3. Unscrew the gas units from the frame mountings. Three screws at top and two at bottom of gas units.(refer to Fig 1).

4. For multiple frame Deluxe systems, remove the GPO assembly from the frame that does not contain the controller and pump, by removing the four screws for each GPO/Bracket assembly. There is no need to disconnect the wiring. Carefully cut the cable ties holding the cable in place and temporarily secure the GPO/Bracket assembly onto the frame with the controller. Ensure electrical cables and connections are not stretched or damaged. (Refer to Fig 2)

Figure 1

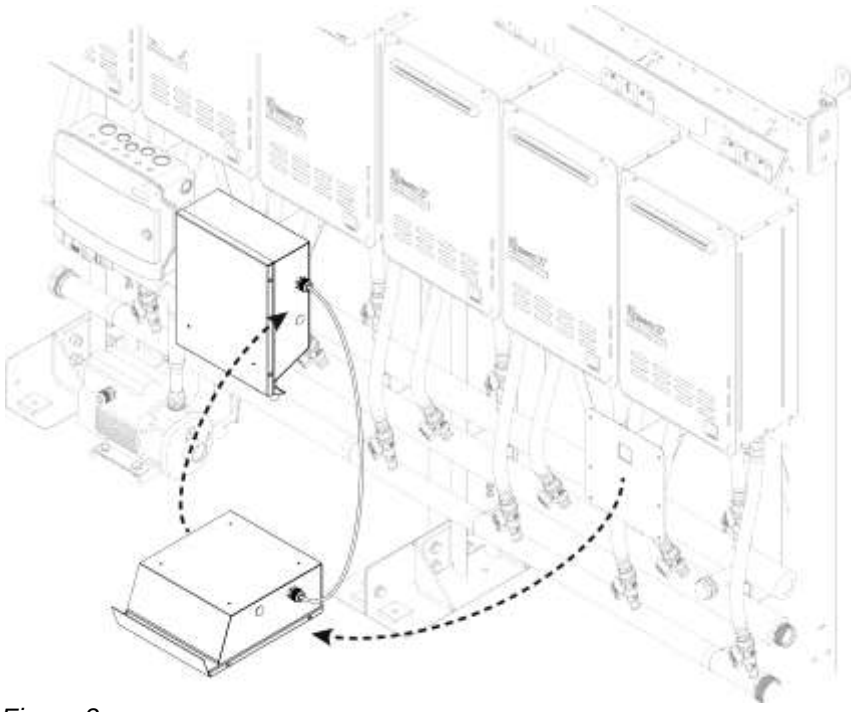


Figure 2

5. For multiple frame systems, disconnect the pump from the cold manifold at the points shown in Fig. 3 and unbolt the water and gas manifolds from the frame (Note relative positions for reassembly).

6. If required, remove the pump by first removing the wiring from the pump and unscrewing the 4 bolts holding it to the bracket. A restricted electrical licence (minimum) will be required if the pump is to be disconnected from the frame and later re-assembled. Refer to Fig 3.

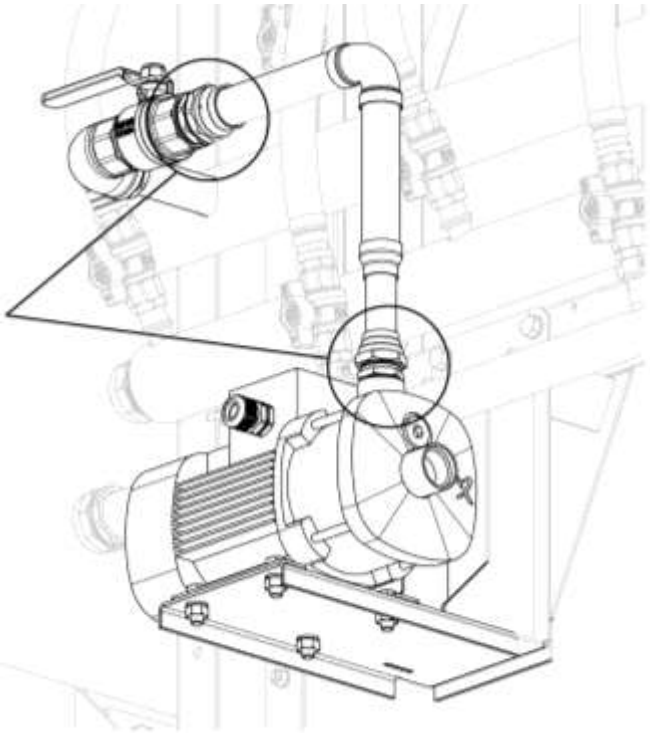


Figure 3

7. Remove the screws holding the frame base to the timber pallet. For multiple frame systems, disconnect the bolts connecting each frame together.
- 8 from the base members of free standing systems
- 4 from the base members of wall mounted systems
- 1 from the top of the frame

Do not discard the spacers located at the bottom of the frame. Refer to Fig. 4 and 5.

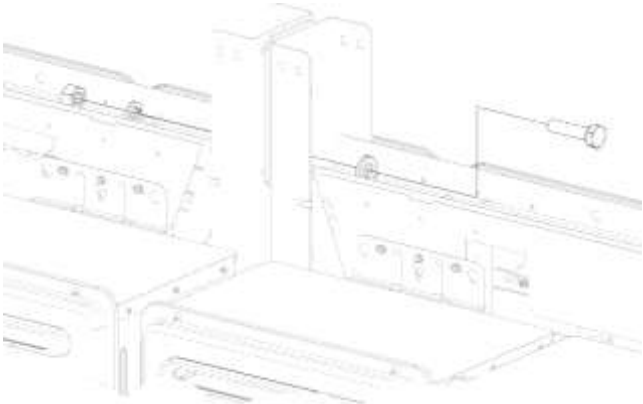


Figure 4

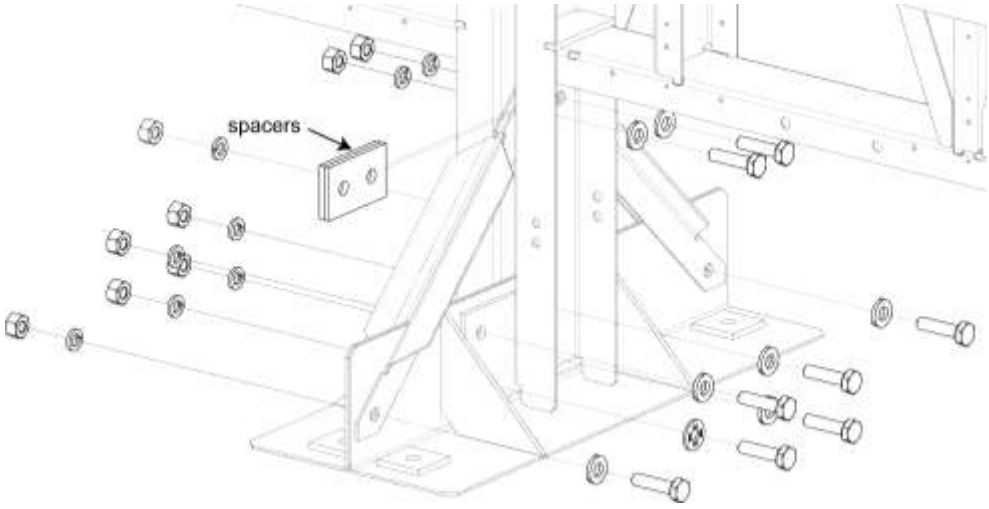


Figure 5

PARTS WEIGHT

- Gas CFWH Rheem 27 litre external = approx 23 kg
- Gas CFWH Rheem 27 litre internal = approx 27 kg
- Frame assembly 3 bay (including pump and manifolds) = 111 kg max
- Frame assembly 4 bay (including pump and manifolds) = 138 kg max
- Frame assembly 3 bay (pump and manifolds removed) = 70 kg max
- Frame assembly 4 bay (pump and manifolds removed) = 78 kg max
- Pump = 19kg max

8. Relocate the system parts to the required position and rebuild the system. Reassembly is the reversal of the disassembly procedure, starting with the frame reassembly. Ensure no system parts or components are dropped or damaged during re-positioning.
9. If the system parts have been left in a disassembled state for any length of time, ensure that all CFWH connections, hose ends and manifolds are clear of any debris or foreign matter.
10. Ensure the frame is structurally sound and that it has been re-assembled exactly as it was received. Ensure all bolts, nuts, washers and spacers are installed in original locations and are tightened until the spring washer is fully compressed. Refer to Fig 4 & 5.

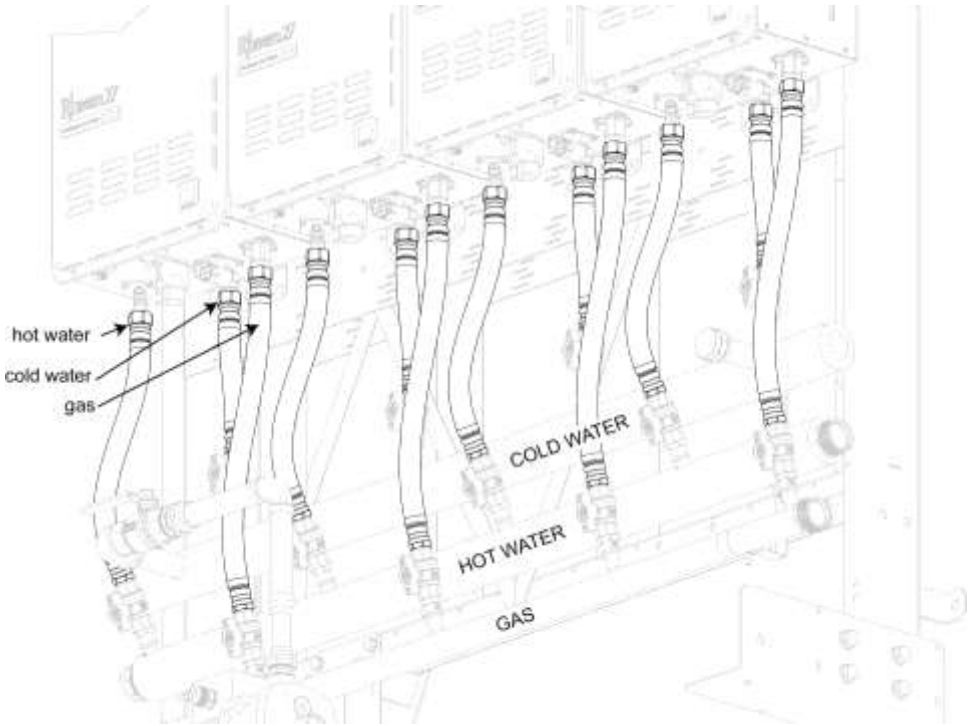


Figure 6

11. Reinstall the water and gas manifolds paying attention to their location. Refer to Fig. 6
12. If removed, re-install pump and GPO assemblies, refer to Fig 7 for pump wiring details

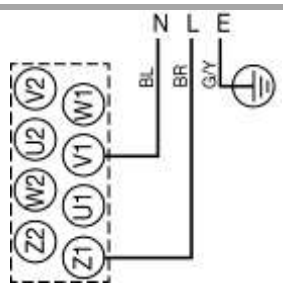
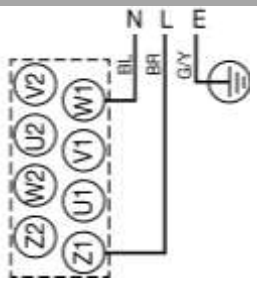
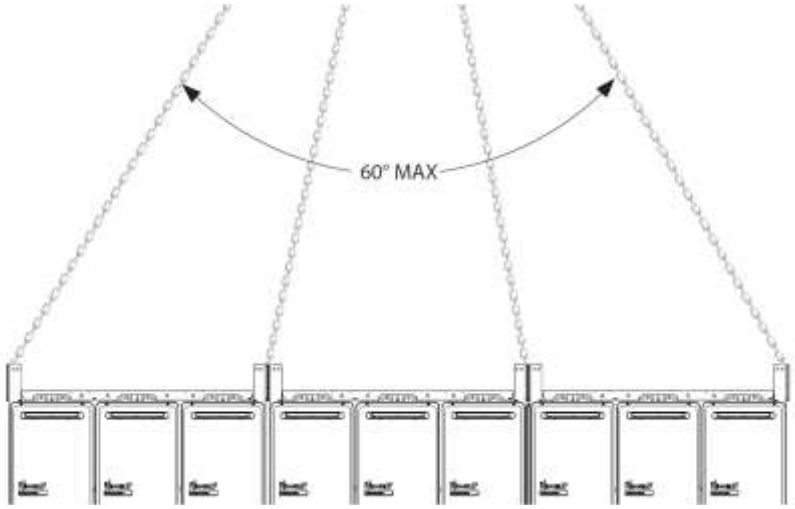
TP8-18 (CM10-1)	TP2-4 (CM3-2) TP5-7 (CM5-2)
	

Figure 7

13. Reinstall all gas units. There are two hole positions on the top horizontal member. Top holes are for internal gas units, bottom holes are for external gas units. Installing to the wrong hole will either kink the flexible connectors or render them too short, refer to Fig 8.
14. Connect the flexible hose connectors to the gas units. Ensure all connections into the gas units are correct i.e. gas to gas (yellow handle), cold to cold (green handle) and hot to hot (red handle). Do not allow for any flexible connection hoses to be kinked or restrict water or gas flow in any way. Refer to Fig. 6
15. Secure cables with new cable ties (not supplied) and check system for completeness.

LIFTING

Frames are designed to be lifted by an overhead crane utilising **all of the frame's lifting lugs** with a maximum included lifting angle of 60°, see figure on page 21. The crate is designed to be lifted using a forklift while fully assembled. Lifting should only be done in accordance with the installation instructions provided with the system.



FLOOR AND WALL MOUNTING

Frames are manufactured for either floor or wall mounting. The length of the floor mounting base member is 600mm and the wall mounting base member is 360mm.

Wall mounting requires the frame to be secured to the floor and the wall. Two mounting brackets are packaged with the system to allow the frame to be fixed to the wall. Two (2) Hilti M8 HSL-3 masonry anchors, or equivalent, (not supplied) are to be used for securing the wall mounting brackets to the wall. Ramset M12 Chemset Maxima chemical anchors bolts (supplied) are to be used to secure each base member to the floor.

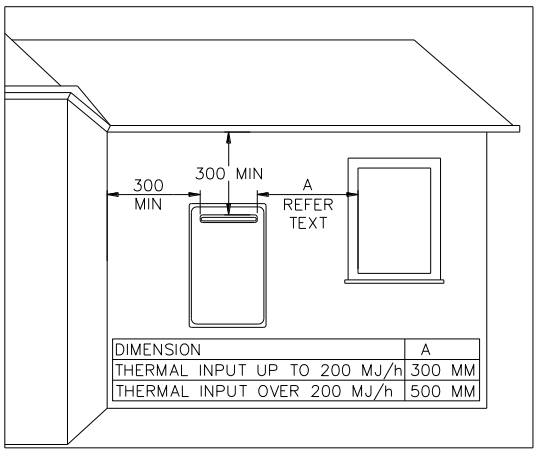
Floor mounted frames are to be secured to the ground using M12 Chemset Maxima chemical anchor bolts (supplied). Each base member is to have two (2) anchor points secured in order to satisfy the wind load ratings shown on page 23

Refer to the instruction pamphlet supplied with the chemical bolts for details. All chemical anchors are to be installed to their manufacturer's specifications.

OUTDOOR INSTALLATION

If outdoors, a secondary flue is not required. The water heater must not be installed indoors or in a confined space.

The water heaters must be positioned to ensure that the location of the flue terminals complies with the requirements of AS/NZS 5601 or AS/NZS 5601.1, as applicable under local regulations. As a guide the following requirements are extracted from AS/NZS 5601.1. The distances are measured along the wall behind the water heater.



- At least 300 mm between the top of the flue terminal and the eaves.
- At least 500 mm between the flue terminal and the edge of any opening into the building, such as an openable door or window, measured horizontally*.
- At least 1500 mm between the top of the flue terminal and the edge of any opening into the building, such as an openable window, measured vertically.
- At least 300 mm between the flue terminal and a return wall or external corner, measured horizontally*.
- At least 1500 mm between the flue terminal and any opening into a building, in the direction of the flue discharge.
- At least 500 mm between the flue terminal and a fence, wall or other obstruction, in the direction of the flue discharge.

Note: * If these horizontal distances cannot be achieved, AS/NZS 5601.1 states an equivalent horizontal distance measured diagonally from the nearest discharge point of the flue terminal to the opening may be deemed to comply. Check with the local regulator.

Note: Two or more of this model CFWH can be installed side by side with minimal clearance between them. The AGA has approved the installation of two or more of this model CFWH with an exemption from the 300 mm minimum clearance requirements between flue terminals, as stated in AS/NZS 5601, clause 5.13.6.5 and AS/NZS 5601.1, clause 6.9.3.

WIND LOADING

This water heater is designed to withstand a wind speed of 74.87m/sec[1].
Height restrictions apply to outdoor installation of free standing systems as detailed in the table on page 23.

Free standing systems are supplied with wind kit brackets fitted to the frame as standard. These **MUST** be in place for the installation height shown in the table on page 23.

Note: Free standing systems **MUST NOT** be installed in wind region C without wind kit brackets.
Free standing systems are **NOT SUITABLE** for outdoor installation in wind region D.

MAXIMUM PERMISSIBLE INSTALLATION HEIGHT - REGION SPECIFIC

	Region A	Region B	Region C	Region D
Terrain Category 1	200m	200m	20m	-
Terrain Category 2	200m	200m	20m	-
Terrain Category 3	200m	200m	30m	-
Terrain Category 4	200m	200m	30m	-

[1]74.87m/sec based on a Type 2 structure, 25 year design life, 1/250 ARI, Region C only.

INDOOR INSTALLATION

VENTILATION

This water heater **MUST ONLY** be installed with a certified Rheem coaxial flue system. The kit enables a room sealed installation, drawing air for combustion from outside of the building.

The ventilation of a room or an enclosure such as a cupboard, where the water heater is installed must comply with the requirements of AS 5601 or AS/NZS 5601.1, as applicable under local regulations.

SECONDARY FLUE

A secondary flue must be installed with an indoor water heater to discharge combustion products to outside the building. The water heater **MUST ONLY** be installed with a certified Rheem coaxial flue system.

Where more than one water heater is installed, each water heater must be individually flued using a certified Rheem coaxial flue system. A common flue system **MUST NOT** be used.
Refer to page 32 for details of flue installation.

SAFE TRAY

Where damage to property can occur in the event of the water heater leaking, the water heater must be installed in a safe tray. Construction, installation and draining of a safe tray must comply with AS/NZS 3500.4 and all local codes and regulatory authority requirements.

FROST PROTECTION

The water heater has a frost protection system. The frost protection system will protect the water heater from damage, by preventing ice forming in the waterways, in the event of freezing conditions.

The frost protection system will be rendered inoperable if electrical power is not available at the water heater. Damage to the water heater caused by freezing of the pipe work to or from the water heater is not covered under the Rheem warranty. Refer to AS/NZS 3500.4 for precautions to be taken for installations in frost prone areas. The water heater is not suitable for installation in areas where the ambient temperature falls below -20°C (including wind chill factor).

PRESET OUTLET TEMPERATURE SETTING

The Tankpak Series 2 controller is factory set to 65^{o}C and the continuous flow water heaters are set to 70^{o}C.

It is usually not necessary to check or adjust the factory preset outlet temperature setting of the water heater, unless the customer or application has a particular requirement for this to be done.

For applications requiring sanitising temperatures, such as a commercial kitchen, it will be necessary to adjust the preset outlet temperature setting of the CFWH and the controller to achieve and maintain sanitising temperatures up to 82°C. Refer to page 4 and 54 for details.

If the water heater is installed as part of a circulated hot water flow and return system in a building, the preset outlet temperature setting must be set to at least 60°C. If the water temperature decreases by more than 5°C through a circulated hot water flow and return system due to heat loss in the ring main, the preset outlet temperature setting of the water heater should be set to at least 65°C.

GAS BOOSTER FOR A SOLAR WATER HEATER

Note: AS 3498 requires that a water heater provides the means to inhibit the growth of Legionella bacteria in potable water. When this water heater is used as an in-series booster for a solar water heater it can satisfy this AS 3498 requirement provided it is energised and the booster preset outlet temperature setting is 70°C or higher.

HOT WATER DELIVERY

This water heater can deliver water at temperatures which can cause scalding.

It is necessary and we recommend that a temperature limiting device be fitted into the hot water piping to any ablution and public areas such as a bathroom, ensuite or public amenities when a Tankpak Series 2 water heater is installed to reduce the risk of scalding. The installing plumber may have a legal obligation to ensure the installation of this water heater meets the delivery water temperature requirements of AS/NZS 3500.4 so that scalding water temperatures are not delivered to a bathroom, ensuite or other ablution or public area.

Where a temperature limiting device is installed adjacent to the water heater, the cold water line to the temperature limiting device can be branched off the cold water line either before or after the isolation valve, pressure limiting and non return valve to the water heater. If an expansion control valve is required, it must always be installed after the non return valve and be the last valve prior to the water heater.

If a pressure limiting valve is installed on the cold water line to the storage tank and the cold water line to a temperature limiting device branches off before this valve or from another cold water line in the premises, then a pressure limiting valve of an equal pressure setting may be required prior to the temperature limiting device.

TEMPERATURE LIMITING DEVICE

A temperature limiting device cannot be installed in circulated hot water flow and return pipe work, unless it is specifically designed to do so, such as the Rheem Guardian warm water system. The tempered water from a temperature limiting device cannot be circulated. Where a circulated hot water flow and return system is required in a building, a temperature limiting device can only be installed on a dead leg, branching off the circulated hot water flow and return pipe.

If circulated tempered water were to be returned back to the water heater, depending on the location of the return line connection on the water supply line to the water heater, then either:

- Water will be supplied to the cold water inlet of the temperature limiting device at a temperature exceeding the maximum recommended water supply temperature, or
- When the hot taps are closed no water will be supplied to the cold water inlet of the temperature limiting device whilst hot water will continue to be supplied to the hot water inlet of the temperature limiting device.

These conditions may result in either water at a temperature exceeding the requirements of AS/NZS 3500.4 being delivered to the hot water outlets in the ablution areas, or the device closing completely and not delivering water at all, or the device failing. Under either condition, the operation and performance of the device cannot be guaranteed.

SYSTEM COMPONENTS

CONTROLLER

Enclosure

The controller enclosure has a protection rating IP44 and can be installed indoors or outdoors. To aid with visualisation of the control panel, it is recommended to not install the water heater such that the controller will be in direct sunlight.

Operating Thermostat Sensor - The operating thermostat (Eliwell IC902) senses the storage cylinder water temperature and determines whether the continuous flow water heaters (CFWH) should be switched on or off, via the pump. Adjustments can be made to the thermostat parameters from the front display. The sensor is connected to the thermostat via a 10m double insulated lead which must be installed in the thermostat well within one of the storage tanks.

Timers – CFWH must go through a complete shut down and restart cycle at least once per 24 hour period. Two 24 hour timers are provided within the controller to ensure this occurs should system operational parameters prevent the thermostat from turning off the pump. Two timers provide backup redundancy. The timers must be set during commissioning. Refer to page 57.

Pump Control Relay – The pump is operated via two relays capable of handling the maximum current of the range of pumps supplied with Tankpak. Two relays provide redundancy.

Pump Circuit Breaker - a 16Amp circuit breaker is provided within the controller to provide short circuit protection to the pump circuit. It is NOT a system isolator.

Pump - A Grundfos CM pump is factory fitted and wired to the assembly. The pump is sized according to the number of CFWH and with the tank(s) in relative proximity to the frame assembly. The pump is supplied with TP 211 type B thermal protection in the windings. The pump must be replaced, if necessary, with like pump.

Continuous Flow Water Heaters – CFWH supplied with this assembly could be indoor or outdoor, natural gas or propane or ULPG in New Zealand. Each CFWH has a gas input rating of 205MJ/hr and must be replaced, if necessary, with like water heaters.

General Purpose Outlets – for Tankpak Deluxe models, 240V GPOs are provided on the frame assembly to provide power to the CFWH. In this instance the power is drawn from the controller terminals GPO 1 and /or GPO 2. For Standard models, GPOs are not provided. The installer is responsible for providing this power. Refer to page 49 for details.

TANKPAK SERIES 2 INSTALLATION

GENERAL

Follow the instructions supplied with the water storage tank for general installation requirements including, water quality and maintenance requirements.

All packaging materials must be removed from the water heater and storage tank prior to its installation.

Warning! The system must not be turned on until all connections have been made and the system has been charged with water. Failure to do so can lead to electric shock and/or failure of the pump.

OPERATION

Tankpak Series 2 operates on the top down heating principle. This ensures the coldest water is always supplied to the CFWH to maximise thermal input and recovery. On a call for heat, the thermostat energises the pump, the flow from which in turn causes the CFWH to fire simultaneously. The rate of fire will depend on the thermostat set point, the flow rate from the pump and the incoming water supply temperature. Water at the set temperature of the CFWH will enter the top of the storage tank or the hot water delivery to the building (or both depending on system dynamics) and heat the storage tank from the top down, until a temperature above the controlling thermostat set point is sensed at the thermostat, at which time the pump will be de-energised and the CFWH will shut down.

CONNECTIONS – PLUMBING

PLUMBING CONNECTIONS

All plumbing work must be carried out by a qualified person and in accordance with the National Plumbing Standard AS/NZS 3500.4 and local authority requirements.

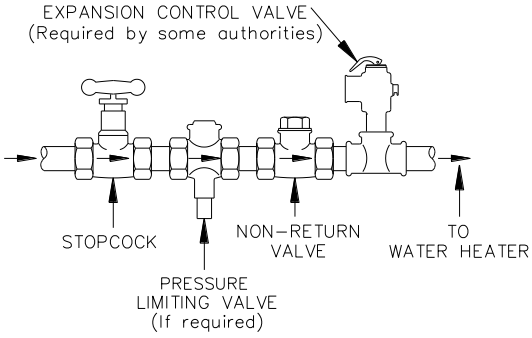
All gas work must be carried out by a qualified person and in accordance with the Australian Gas Installations Standard AS/NZS 5601 or AS/NZS 5601.1 and local authority requirements.

PIPE SIZING

The pipe sizing for hot water supply systems should be carried out by persons competent to do so, choosing the most suitable pipe size to ensure adequate flow for each individual application. Reference to the technical specifications of the water heater and local regulatory authority requirements must be made.

To achieve true mains pressure operation, the cold water line to the water heater should be the same size or bigger than the hot water line from the water heater.

The table below specifies the minimum cold water and hot water manifold header pipe size required between the CFWH and the storage tank(s) and the minimum gas manifold pipe size for typical installations. The design allows for 8m total flow and return between Tankpak and storage tanks (excluding manifolding) and 12 x 90 degree bends.



An isolation valve, non return valve and line strainer must be installed on the cold water supply to the system, A PLV and/or ECV may also be required. A full flow isolation valve/ball or gate disconnection union must be installed on the inlet and outlet of the storage tank(s).

Note: if a Deluxe model has been purchased, the system will be supplied with a line strainer and an isolation valve on the inlet of the Tankpak Series 2 package.

A pressure limiting valve must be fitted if the water supply pressure exceeds 80% of the storage tank temperature and pressure relief valve or expansion control valve setting, whichever is the lower.

Tankpak Model	Thermal Input (MJ/hr)	Minimum Primary Flow and Return Pipe Size (mm)	Minimum Gas Pipe Size (mm)		Pump Model
			NG	Prop	
TP02	410	25	40	25	CM3-2
TP03	615	25	40	25	CM3-2
TP04	820	32	50	32	CM3-2
TP05	1025	40	50	32	CM5-2
TP06	1230	40	50	32	CM5-2
TP07	1435	50	50	32	CM5-2
TP08	1640	50	65	40	CM10-1
TP09	1845	50	65	40	CM10-1
TP10	2050	50	65	40	CM10-1
TP12	2460	50	80	40	CM10-1
TP14	2870	65	80	50	CM10-1
TP16	3280	65	80	50	CM10-1
TP18	3690	80	80	50	CM10-1

PIPE SIZING (COPPER) BETWEEN TANKPAK SERIES 2 AND STORAGE TANK/S

IN-SERIES BOOSTER

The pipe work between the solar storage tank (if one is installed) and the in-series gas booster, **MUST BE** of copper and be fully insulated with a closed cell type insulation or equivalent in accordance with the requirements of AS/NZS 3500.4.

The insulation must be weatherproof and UV resistant if exposed. The insulation must be fitted up to the connections on the solar storage tank.

All pipe work must be cleared of foreign matter before connection and purged before attempting to operate the water heater. All olive compression fittings must use brass or copper olives. Use thread sealing tape or approved thread sealant on all other fittings.

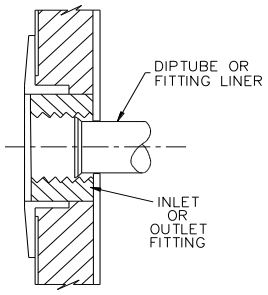
WATER HEATER CONNECTIONS

Connect the water heater and storage tank(s) in accordance with the principles shown in the diagram on page 29 with the following in mind:

Install the storage tanks according to Equa-flow® principles as described in the installation instructions supplied with the storage tanks.

A disconnection union must always be provided at the cold water inlet, hot water outlet and gas connection to the assembly to allow for disconnection of the system

610 Series storage tanks have a plastic fitting liner in the inlet fitting and plastic dip tube in outlet fitting (see diagram). These must be in place for the storage tank to function properly. Do not remove or damage them by using heat nearby. They will be pushed into the correct position as the fitting is screwed in.



EXPANSION CONTROL VALVE

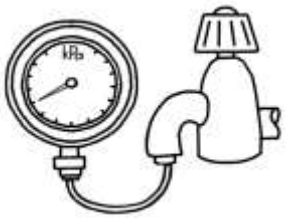
Local regulations may make it mandatory to install an expansion control valve (ECV) in the cold water line to the water heating system. In other areas, an ECV is not required unless the saturation index is greater than +0.4 (refer to 'Water Supplies' in the Instructions supplied with the storage tank). However, an ECV may be needed in a corrosive water area where there are sufficient quantities of silica dissolved in the water.

The expansion control valve must always be installed after the non return valve and be the last valve installed prior to the water heater (refer to diagram on page 26). A copper drain line must be run separately from the drain of the relief valve.

MAINS WATER SUPPLY

Where the mains water supply pressure exceeds that shown in the table below, an approved pressure limiting valve is required and should be fitted.

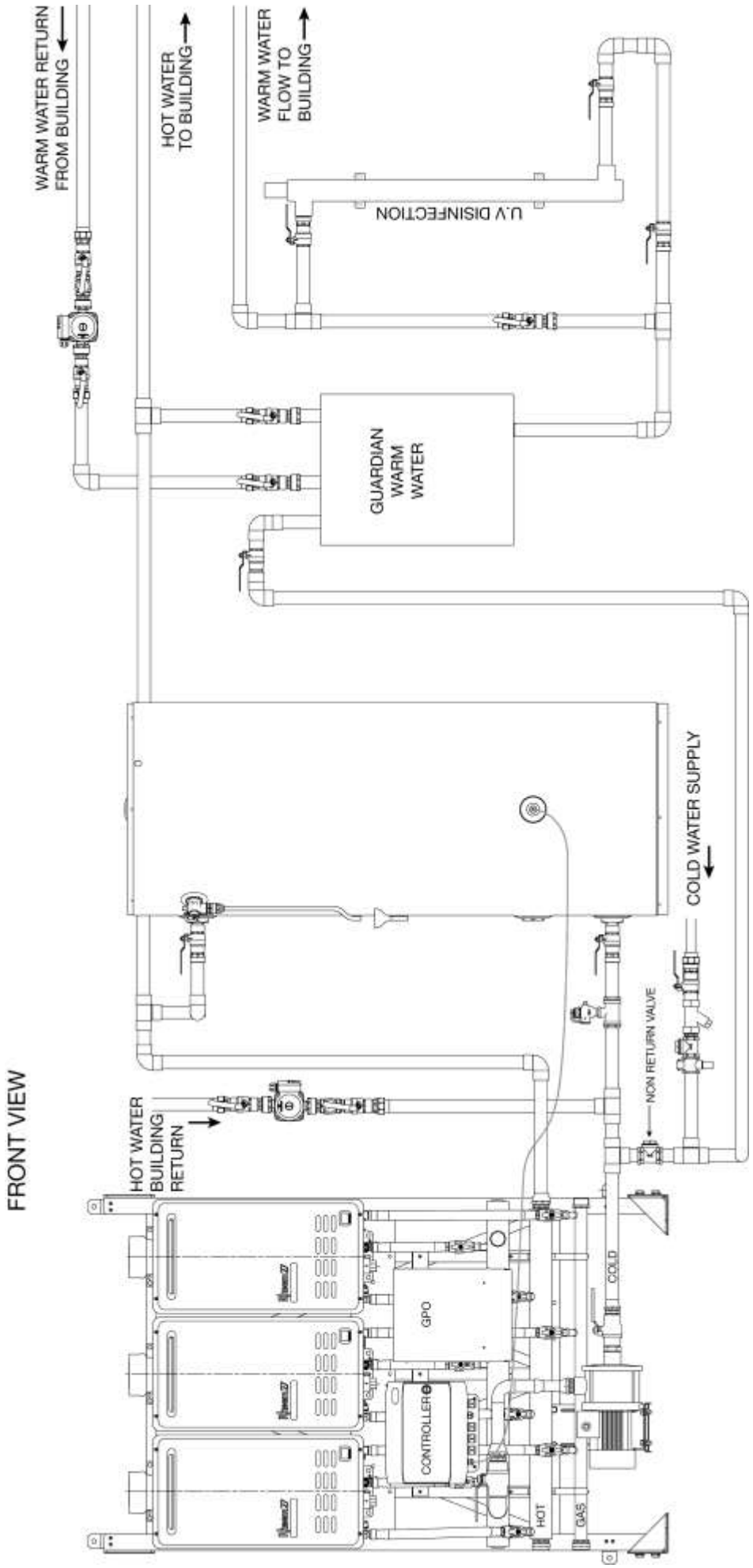
Temperature & Pressure Relief valve setting	1000 kPa
Expansion control valve setting*	850 kPa
Max. mains supply pressure	
Without expansion control valve	800 kPa
With expansion control valve	680 kPa
Min. recommended mains supply pressure	350 kPa



* Expansion control valve not supplied with storage tank

Notes:

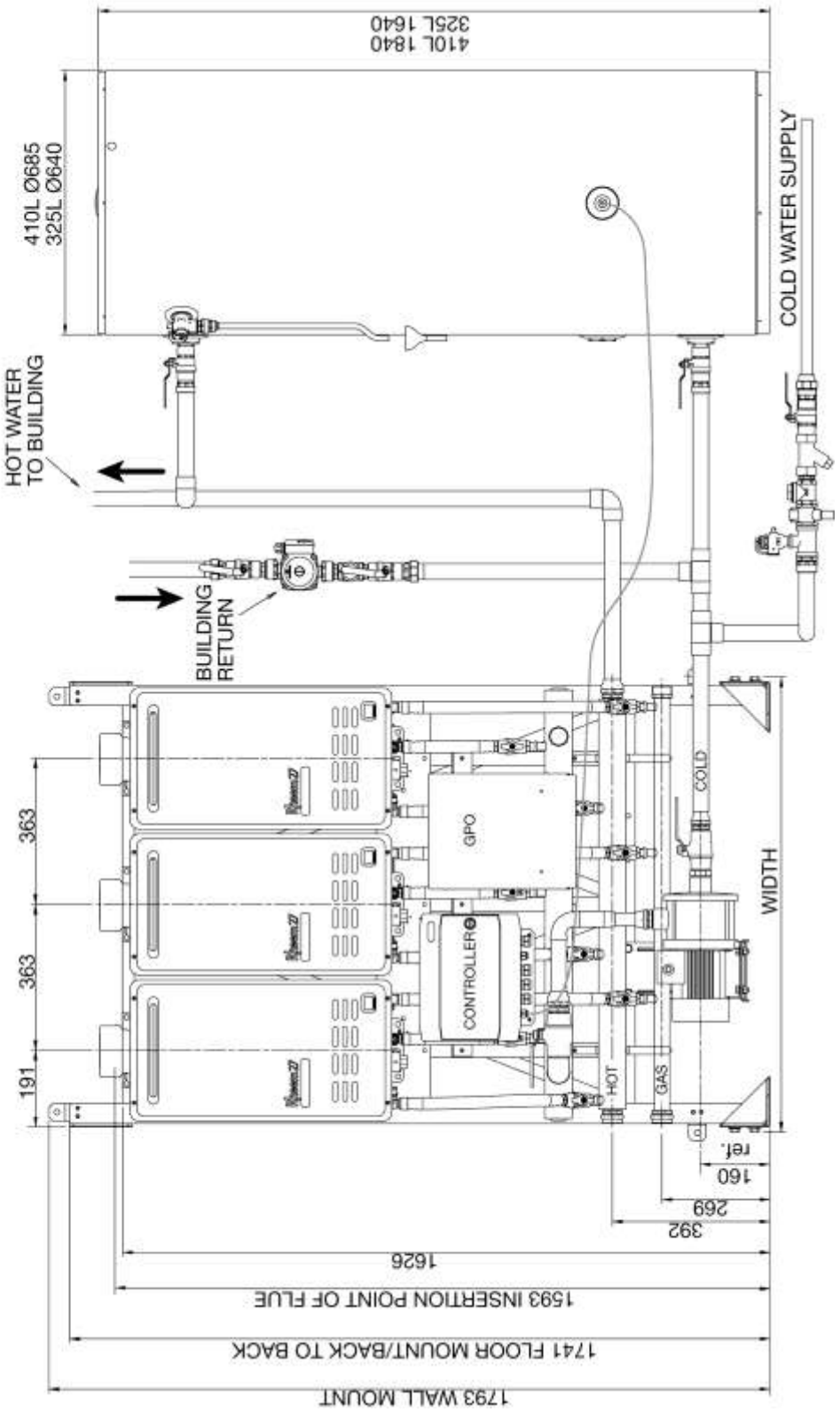
- When installed with Rheem 610 series storage tanks, the maximum water supply pressure, without an expansion control valve (ECV), is 800 kPa, however it may be less than this if used with other storage tanks models. Refer to the Owner's Guide and Installation Instructions supplied with the storage tank for maximum mains supply pressure details.
- This water heater is not suitable for connection to bore water or spring water unless a water treatment device is fitted.
- Refer to "Water Supplies" on page 9 for further information on water chemistry.

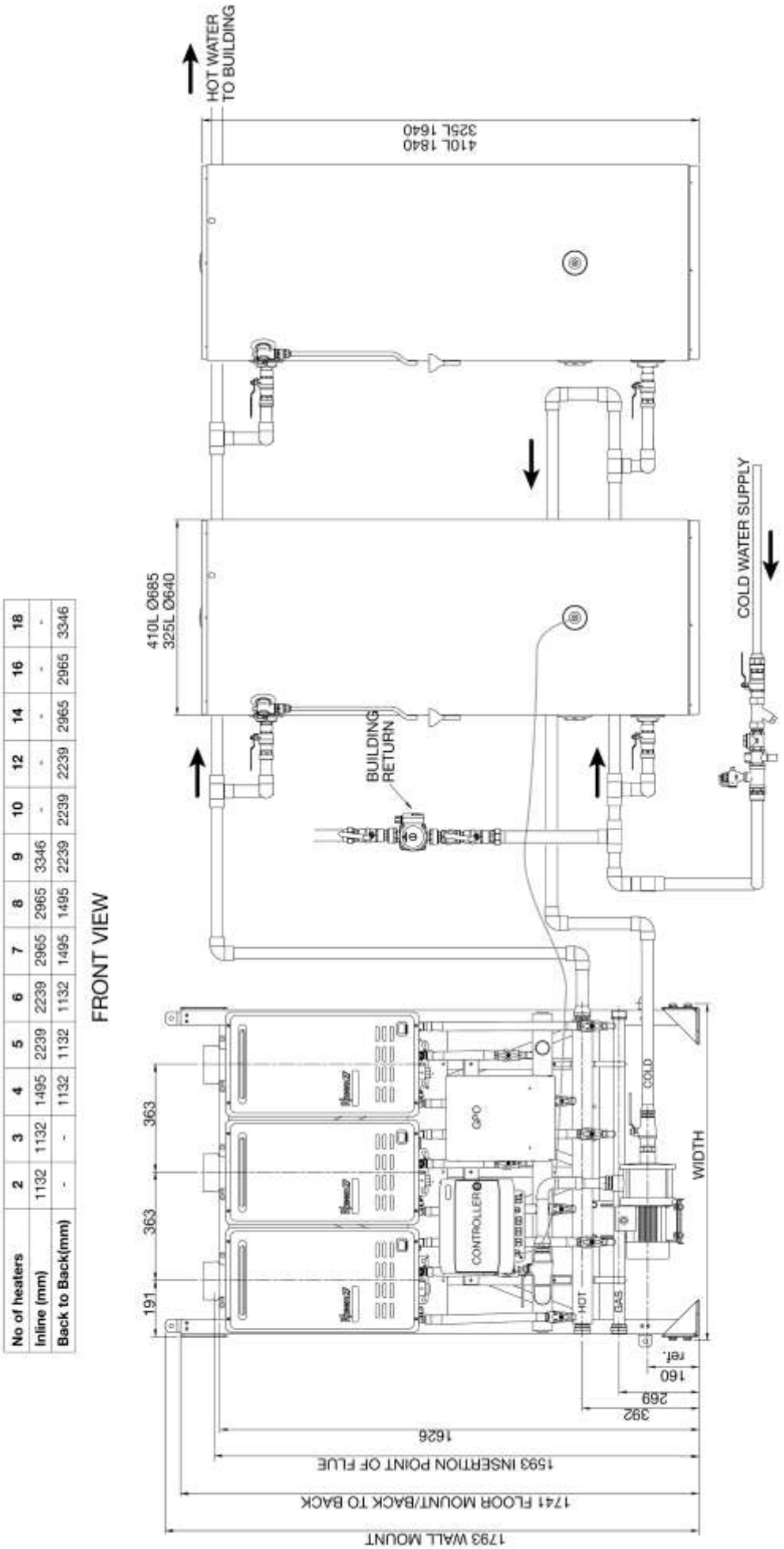


TYPICAL INSTALLATION RHEEM COMMERCIAL TANKPAK WITH RHEEM GUARDIAN

No of heaters	2	3	4	5	6	7	8	9	10	12	14	16	18
Inline (mm)	1132	1132	1495	2239	2239	2965	2965	3346	-	-	-	-	-
Back to Back(mm)	-	-	1132	1132	1132	1495	1495	2239	2239	2239	2965	2965	3346

FRONT VIEW





No of heaters	2	3	4	5	6	7	8	9	10	12	14	16	18
Inline (mm)	1132	1132	1495	2239	2239	2965	2965	3346	-	-	-	-	-
Back to Back(mm)	-	-	1132	1132	1132	1495	1495	2239	2239	2239	2965	2965	3346

RELIEF VALVE DRAIN

A copper drain line must be fitted to the relief valve to carry the discharge clear of the storage tank/s. Connect the drain line to the relief valve using a disconnection union. The pipe work from the relief valve to the drain should be as short as possible and fall all the way from the water heater with no restrictions. It should have no more than three right angle bends in it. Use DN20 pipe.

The outlet of the drain line must be in such a position that flow out of the pipe can be easily seen (refer to AS/NZS 3500.4) - but arranged so hot water discharge will not cause injury, damage or nuisance. The drain line must discharge at an outlet or air break not more than 9 metres from the relief valve.

In locations where water pipes are prone to freezing, the drain line must be insulated and not exceed 300 mm in length. In this instance, the drain line is to discharge into a tundish through an air gap of between 75 mm and 150 mm.

For multiple installations the drain line from each storage tank can discharge into a common tundish.

As the function of the temperature pressure relief valve on this water heater system is to discharge high temperature water under certain conditions, it is strongly recommended the pipe work downstream of the relief valve be capable of carrying water exceeding 93°C. Failure to observe this precaution may result in damage to pipe work and property.

GAS INLET

The pipe work must be cleared of foreign matter before connection and purged before attempting to light the water heater. An isolation valve and disconnection union must be used to allow servicing and removal of the water heater.

Always isolate the water heater before pressure testing the gas supply system. Disconnect the water heater after the isolating cock to prevent the risk of serious damage to the gas train. Warranty does not cover damage of any nature resulting from failure to observe this precaution. Refer to the rating label for gas types and pressures.

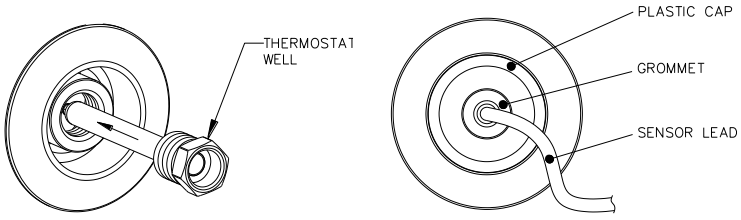
The heater and its gas connection must be thoroughly leak tested before placing in operation. Use soapy water and a manometer for leak test.
DANGER! Do not use an open flame to check for gas leaks

Note: Refer to the Gas Installations Standard AS/NZS 5601 or AS/NZS 5601.1 for the correct method of sizing the gas supply pipe to the water heater. The pipe size selection must take into account the high gas input of this water heater as well as all of the other gas appliances in the premises.

TEMPERATURE SENSOR PROBE

The storage tank must be within 10m of the controller.

For 610 series storage tanks, remove the plastic cover to expose the thermostat well, which is located at the front of the storage tank. Drill a small hole in the plastic cover suitable to fit the thermostat sensing probe and feed the wire through the plastic cover and all the way into the thermostat well. Refit the plastic cover.

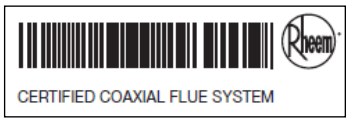


FLUEING

SECONDARY FLUE

A secondary flue must be installed with an indoor water heater to discharge combustion products to outside the building. The water heater **MUST ONLY** be installed with certified Rheem coaxial flue components carrying the label opposite. **DO NOT** use any other type of flue parts.

Where more than one water heater is installed, each water heater must be individually flued using certified Rheem coaxial flue components.



A common flue system **MUST NOT** be used.

The installation of the secondary flue must be carried out by a qualified person and be in accordance with the Gas Installations Standard AS 5601 or AS/NZS 5601.1, as applicable under local regulations, local authority requirements and the installation instructions. A charge will be made for any service related call due to the installation of the flue system not complying with these installation instructions.

The water heater must be flued separately from all other appliances and flued to the outdoors. Minimum clearance requirements apply from the flue terminal in accordance with AS 5601 or AS/NZS 5601.1 (refer also to "Flue Terminal Location" on page 34). Do not install the flue to discharge into a chimney. There is no requirement on the flue to maintain a minimum distance from combustible materials.

Warning: Where the flue penetrates through walls, floors or ceilings, the penetration must comply with local regulations for fire rating. The coaxial flue system does not have nor provides a fire rating.

The water heater flue may be terminated either horizontally with a Horizontal Flue Terminal or vertically with a Vertical Flue Terminal. The secondary flue must be self supporting and not impose a load on the water heater.

Flue runs must be adequately supported along both horizontal and vertical runs. The maximum recommended unsupported span for a horizontal run should be no more than 2.0 m. Support isolation hanging bands should be used. Do not use wire. Wall Brackets (PN 295129) are available and should be used for vertical runs. The coaxial flue components are to be connected together using the screws provided. The flue outside diameter is 127 mm.

Warning: Never operate the water heater unless it has been installed in accordance with the installation instructions. Failure to install the water heater in accordance with the installation instructions, properly flueing the water heater to the outdoors and ensuring it has an adequate air supply, will result in unsafe operation of the water heater, possibly causing fire, explosion, serious injury and asphyxiation from carbon monoxide.

A sealing gasket is located at one end of the inner flue. Check all flue components to ensure the gasket is in place and properly seated. **DO NOT** install if any gaskets are missing. Contact Rheem Service or their nearest Accredited Service Agent if the gasket is missing.

COMPONENTS

A complete flue system is comprised from the following components.

horizontal flue terminal
(PN 295116)

Flue Outlet

trim ring
(PN 295125)

vertical flue terminal
(PN 295117)

Flue Outlet

Flue Outlet

condensate trap
(PN 295139)

90° bend
(PN 295118)

45° bend
(PN 295119)

straight length – 300 mm
(PN 295126)

wall bracket
(PN 295129)

male to male (MM) adapter
(PN 295124)

female to female (FF) adapter
(PN 295123)

adjustable straight length – 560 to 890 mm
(PN 295127)

straight length – 900 mm
(PN 295122)

FLUE TERMINAL LOCATION

The water heater must be located to ensure that the location of the flue terminal complies with the requirements of AS 5601 or AS/NZS 5601.1, as applicable under local regulations. As a guide the following requirements are extracted from the Gas Installations Standard. The distances are measured along the wall from the flue penetration.

Horizontal Flue Terminal Location

- At least 300 mm between the top of the flue terminal and the eaves.
- At least 300 mm between the bottom of the flue terminal and the ground, balcony or other surface.
- At 500 mm between the flue terminal and the edge of any opening into the building, such as an openable door or window, measured horizontally*.
- At least 1500 mm between the top of the flue terminal and the edge of any opening into the building, such as an openable window, measured vertically.
- At least 300 mm between the flue terminal and a return wall or external corner, measured horizontally*.
- At least 1500 mm between the flue terminal and any opening into a building, in the direction of the flue discharge.
- At least 500 mm between the flue terminal and a fence, wall or other obstruction, in the direction of the flue discharge.
- At least 300 mm between the flue terminal and any other flue terminal, cowl or other combustion air intake.

Note: * If these horizontal distances cannot be achieved, AS/NZS 5601.1 states an equivalent horizontal distance measured diagonally from the nearest discharge point of the flue terminal to the opening may be deemed to comply. Check with the local regulator.

For a multiple unit installation, refer to “Horizontal Flue Terminations” on page 46 for minimum distances between flue terminals.

Vertical Flue Terminal Location

- At least 300 mm between the underside of the flue terminal and the nearest part of a non-trafficable roof.
- At least 1500 mm between the top of the flue terminal and the edge of any opening into the building, such as an openable window, measured vertically.
- At least 500 mm between the flue terminal and any building structure or obstruction facing the terminal, measured horizontally.
- At least 1500 mm between the flue terminal and the edge of any opening into the building, measured horizontally.
- At least 300 mm between the flue terminal and any other flue terminal, cowl or other combustion air intake.

For a multiple unit installation, refer to “Vertical Flue Terminations” on page 46 for minimum distances between flue terminals.

FLUE LENGTHS

Maximum Flue Length

The system will not operate if there is excessive restriction (pressure drop) in the flueing system.

The certified flue length is 9m with a maximum of 3 x 90^{o} bends.

- The maximum flue length with no bends can be 13.5m.
- Reduce the maximum length by 1.5m for every 90^{o} bend and by 0.75m for every 45^{o} bend
- The flue must be installed with a gradient of 20 mm per metre of horizontal run (1; 50 fall).

Note: Ensure the seam of the inner flue in horizontal runs is at the top of the installation.

Minimum Flue Length

The minimum horizontal flue distance which may be used is 300 mm, provided:

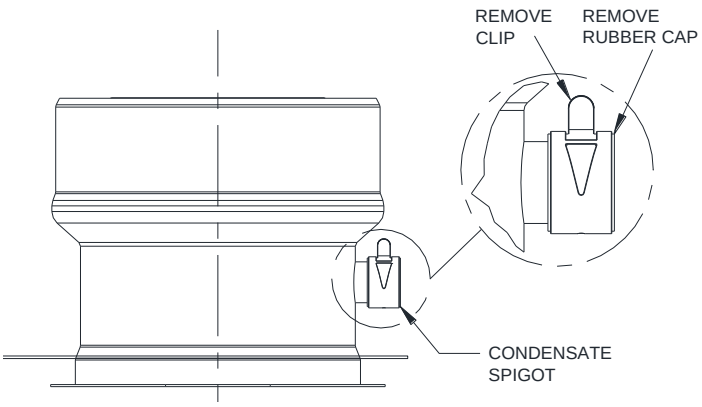
- One 90° Bend is connected to the flue outlet of the water heater, and
- The Horizontal Flue Terminal is connected to the 90° Bend.

FLUE CONDENSATE

Condensate from the combustion gases may form in the flue. The flue outlet assembly at the top of the water heater incorporates a condensate drain spigot to allow for draining of this condensate.

This spigot is covered by a rubber cap held in position by a clamp. For certain types of installations, it will be necessary to remove the clamp and cap and install a Condensate Trap (PN 295139) and drain line.

The Condensate Trap must be filled with water prior to the operation of the water heater. Refer to “Condensate Trap and Condensate Drain Line” on page 36.



Condensate drain spigot

Draining the Condensate

A Condensate trap and drain line must be installed under the following conditions in order to prevent condensate from draining back into the water heater:

- Where vertical sections exceeding 2 m are incorporated in a horizontally terminating flue system.
- Where the flue terminates vertically.
- Where there is a horizontal run of flue between two bends and the bend closest to the flue terminal is orientated upward.

This horizontal run of flue must have a gradient upward to the flue terminal. Condensate will drain back toward the water heater.

Failure to install a Condensate Trap and drain line could allow acidic flue gas condensate to enter into the water heater flue-way, causing premature failure of the water heater. Any resultant faults will not be covered by the Rheem warranty.

Note: A horizontal run of flue connecting directly to a Horizontal Flue Terminal must have a gradient downward to the flue terminal. Condensate will drain from the flue terminal.

Condensate Trap and Condensate Drain Line
Where the installation requires a Condensate Trap and condensate drain line:

1. Remove the clamp and rubber cap from the condensate drain spigot on the water heater flue outlet assembly.

2. Locate the Condensate Trap in a suitable position adjacent to the water heater.

   The loop of the condensate trap **MUST BE** below the spigot of the condensate drain section to ensure proper drainage.

   Secure to the wall with the pipe saddle supplied.

   If required, trim the hose length to suit the installation. Ensure the structure of the Condensate Trap including the fixed loop is not altered and the trimmed hose seals to the spigot.

3. Fill the condensate trap with water.

4. Fit the shorter end of the silicone tube to the 16 mm spigot of the water heater flue outlet, ensuring a constant fall to the condensate trap.

   Secure to the spigot with the clamp removed in step 1.

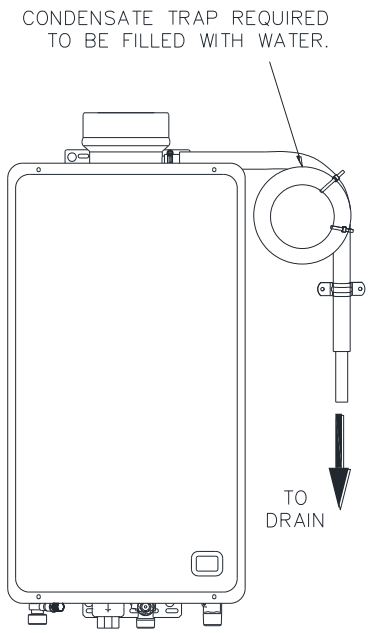
   Ensure the silicon hose is not kinked.

5. Plumb the outlet of the Condensate Trap to drain.

   Ensure the silicon hose is not kinked.

   The drain line should be as short as possible, have a continuous fall all the way from the Condensate Trap to the discharge outlet and have no tap, valves or other restrictions in the pipe work.

   The outlet of the drain line must be in such a position that flow can be easily seen, but arranged so the condensate will not cause injury, damage or nuisance.



Condensate Trap and Condensate Drain Line

⚠ **Warning:** Failure to fill with water may cause flue gasses to escape through the condensate trap. Check regularly to ensure the condensate trap is filled with water, replenishing when required.

Notes
AS/NZS 3500.4 section 5.12 is used as a guide in preparing the following drainage recommendations.

As the condensate is mildly acidic, copper tube and fittings must not be used as they will corrode.

Use UPVC (Unplasticised Polyvinyl Chloride) or PE (polyethylene) piping.

The drain line must not discharge onto electrical connections, earth stakes, copper pipe, concrete paths or into a pond.

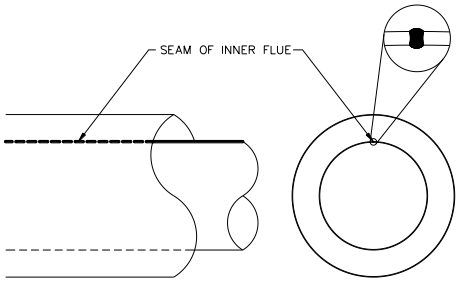
For a multiple unit installation, refer to "Multiple Water Heater Condensate Trap and Condensate Drain Line Installation" on page 47.

HORIZONTAL FLUE RUNS

There are a number of basic installation requirements which must be followed for a flue installation incorporating horizontal flue runs.

Failure to observe these precautions can lead to the premature failure of the flue system and / or water heater.

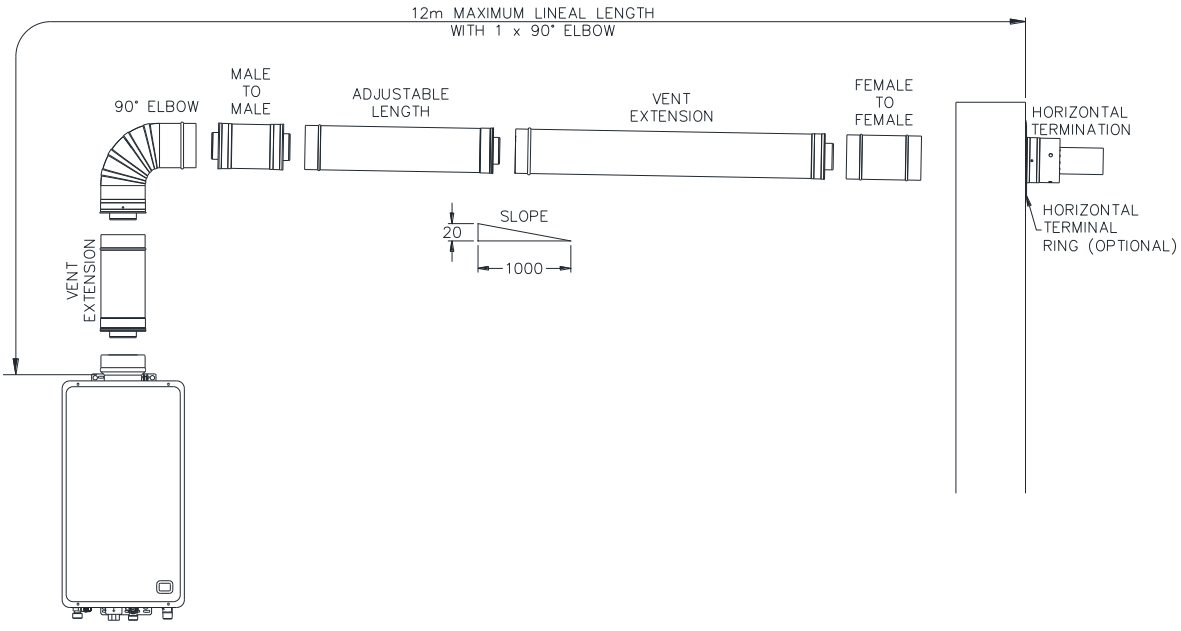
- The flue must be installed with the seam of the inner flue toward the top of the installation.



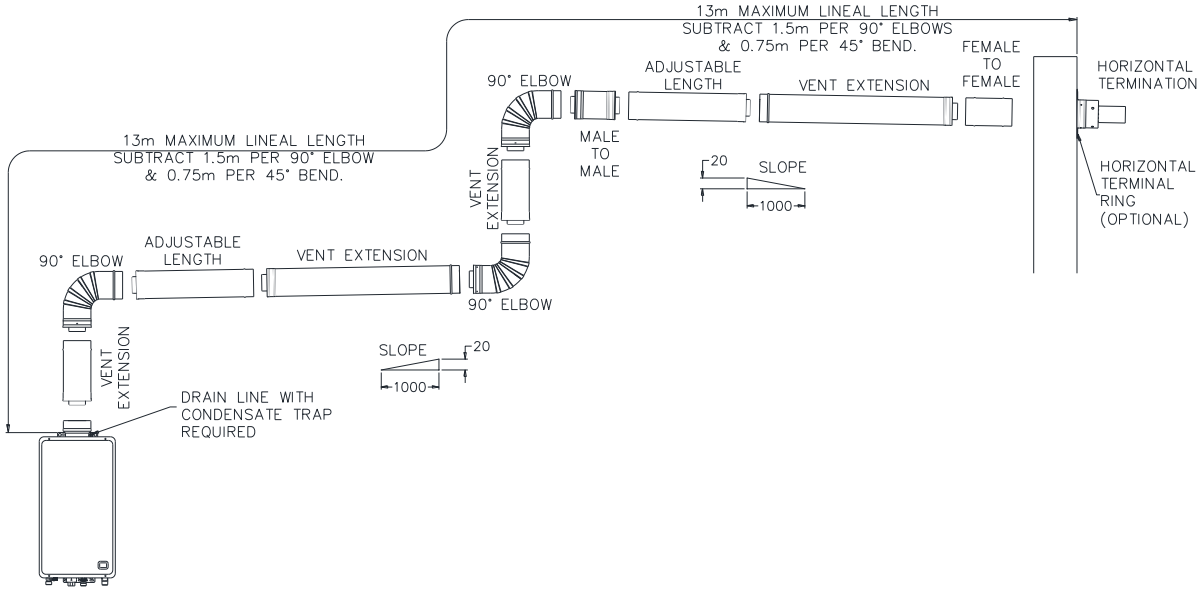
- A horizontal section of flue must be installed with a gradient of 20 mm per metre (1 in 50 or 1° fall) of horizontal run.
- A horizontal run of flue between two bends, where the bend closest to the flue terminal is **orientated upward**, must have a gradient upward to the flue terminal.
  - Condensate will drain back toward the water heater. A Condensate Trap and drain line must be installed where the horizontal flue is installed with an upward gradient. Refer to "Draining the Condensate" on page 35.

    This ensures any condensate formed during operation of the water heater is prevented from draining back into the water heater.
- A horizontal run of flue connecting directly to a Horizontal Flue Terminal must have a gradient downward to the flue terminal.

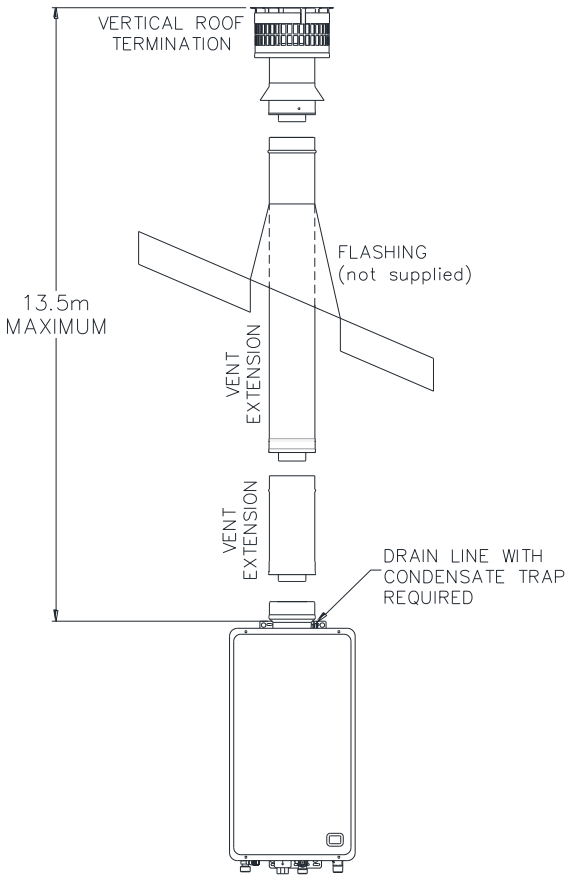
  This prevents rainwater from entering the flue draining back into the water heater.
  - Use Male to Male and Female to Female Adapters to reverse the direction of flue insertion where three or more sections of flue are used in a horizontal flue run and the flue drains toward the flue terminal. Refer to the diagram "Typical Installation – Horizontal Terminal with One Bend" on page 37.

    This provides for proper draining of condensate without pooling at the flue component joins.
- 

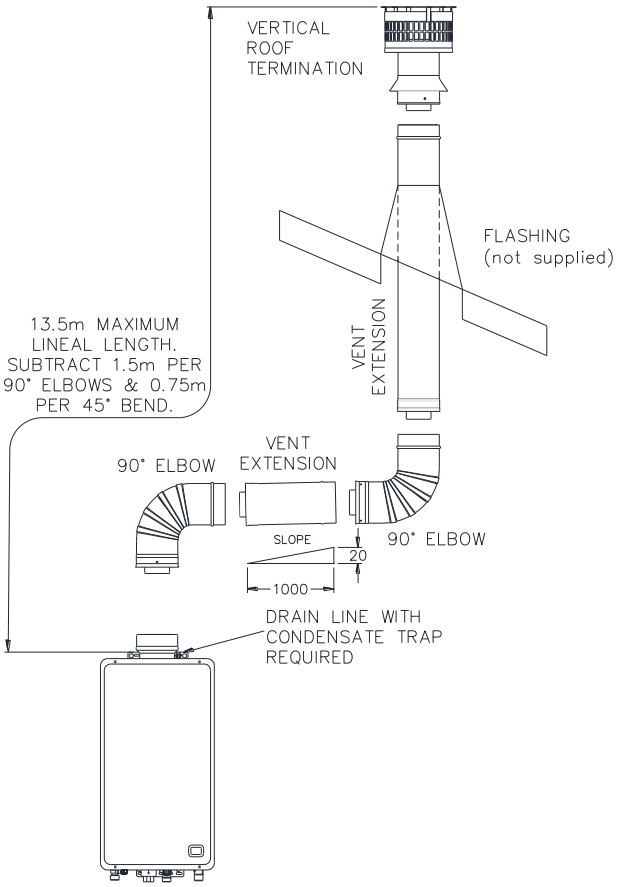
Typical Installation – Horizontal Terminal with One Bend



Typical Installation
Horizontal Terminal with Multiple Vertical and Horizontal Sections



Typical Installation
Vertical Flue



Typical Installation
Vertical Terminal with Vertical and Horizontal Sections

HORIZONTAL FLUE INSTALLATION

Horizontal Flueing – Directly Behind Water Heater

This method of flue installation is used where the secondary flue is to penetrate and terminate immediately behind the wall on which the water heater is mounted.

Do not remove the plastic film from the flue outlet of water heater prior to this type of flue installation, to prevent debris from the drilling operation entering the water heater flue outlet.

Notes:

Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.

Each flue component is supplied with screws to connect to the adjacent flue component. The screws are located in a bag taped to the outside of the flue component.

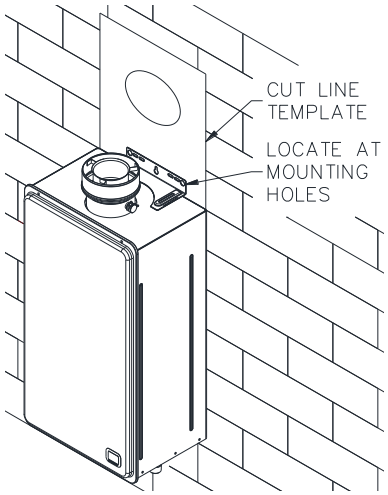
1. Carefully remove the template inserted as the middle pages of this installation instructions booklet.

2. Align the mounting bracket holes on the template exactly over the upper wall mounting bracket holes on the water heater.

   This step presumes the water heater is hung on the wall. For floor mounted units, align the template as close as possible with the upper mounting bracket holes on the water heater.

   - It may be convenient to tape the template to the wall.

   Note: Ensure there are no studs, noggins, pipes or electrical cables located in the wall where the flue is to penetrate



position template

3. Mark the pilot hole location through the centre of the template.

   - Remove but **DO NOT DISCARD** the template, repeat for each water heater.

4. Drill a pilot hole using a 6.5 mm diameter or smaller drill bit.

   The drill bit must be long enough to penetrate completely through the outer skin of the external wall.

   Note: Ensure the drill remains level and straight during this step.

5. Cut along the middle of the **bold** circle marked “Cut Line” on the template.

6. Align the centre of the template with the pilot hole on the wall surface and scribe around the template onto the wall.

   The circle should be 150 mm in diameter.

   - Remove but **DO NOT DISCARD** the template, repeat for each water heater.

7. Align the centre of the template with the pilot hole on the outside wall surface and scribe around the template onto the wall.

   The circle should be 150 mm in diameter.

   - Remove the template.

8. Drill or cut the flue termination hole through the wall using a cutting tool suitable for the wall construction.

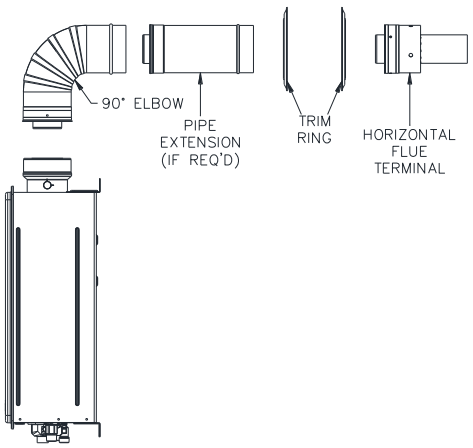
   Note: The Trim Ring (PN 295125) will cover a 150 mm diameter hole.

9. Connect the horizontal terminal (PN295116) and 300mm straight length (PN 295126) into the hole it the wall. Fit a trim ring over the last section of flue.
10. Secure each flue component using the sheet metal screws provided.
11. Connect the 90° Bend (PN 295118) to the water heater flue outlet so it is orientated behind the water heater.
    - Fit the end of the bend down over the water heater flue outlet as far as it will go.

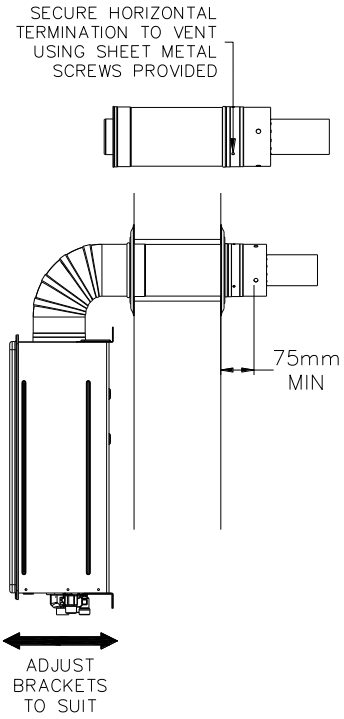
      Ensure there is a minimum 35 mm and maximum 42 mm overlap, the rubber seal on the inner flue is well seated and the bend is fully engaged on the water heater flue outlet.
    - Secure the bend to the outlet with the screws provided.

    Note: A total wall thickness of greater than 170 mm will require a 300 mm Straight Length of flue.
12. Fit the Horizontal Terminal assembly to the 90° Bend and secure using the sheet metal screws provided.
13. Adjust the mounting brackets at the top and bottom of the water heater if required. Bracket adjustment of up to 30 mm can be made and may assist with flue fitment and alignment.
14. Check the end of the outer skin of the flue terminal extends a minimum of 75 mm from the face of the external wall.
15. Apply an adequate bead of sealant around the flue assembly and exterior wall of the building, using a general purpose silicone sealant suitable for outdoor application.

    Failure to properly seal the flue penetration through the wall will result in long term damage due to weather conditions.
16. Apply an adequate bead of sealant on the rear face of a Trim Ring, using a general purpose silicone sealant suitable for outdoor application.
    - Fit the Trim Ring over the flue terminal and press against the wall.



flue components required



17. Apply an adequate bead of sealant around the flue assembly and interior wall of the building and on the rear face of the Trim Ring, using a general purpose silicone sealant suitable for indoor application.

    Press the Trim Ring against the wall.

Refer to "Connections – Electrical" on page 49 electrical connection details and "Commissioning" on page 51 for the commissioning details of the water heater.

Horizontal Flueing – Extended Flue Run
Notes:

- Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.
- Each flue component is supplied with screws to connect to the adjacent flue component. The screws are located in a bag taped to the outside of the flue component.
- Refer to diagrams:
  - “Typical Installation – Horizontal Terminal with One Bend” on page 37, and
  - “Typical Installation – Horizontal Terminal with Multiple Vertical and Horizontal Sections” on page 38.

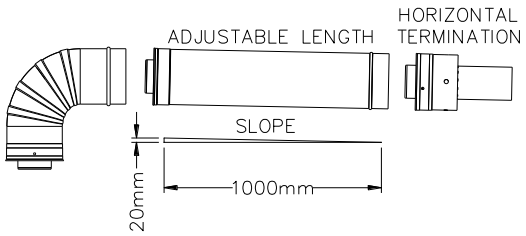
To install an extended horizontal flue and termination:

1. Install the water heater in its final location.
2. Connect the 90° Bend (PN 295118) to the water heater flue outlet and rotate in the desired direction of discharge, if the flue is not to have a change of direction from horizontal to vertical.
   - Fit the end of the bend down over the water heater flue outlet as far as it will go.

     Ensure there is a minimum 35 mm and maximum 42 mm overlap, the rubber seal on the inner flue is well seated and the bend is fully engaged on the water heater flue outlet.
   - Secure the bend to the outlet with the screws provided.
3. Mark the location where the top of the flue is to penetrate the wall to outside of the building.

   If the flue is not to have a change of direction from horizontal to vertical, then to accurately mark this position:

   - Measure the vertical distance from the floor to the top of the 90° Bend, and
   - Measure the horizontal distance from the wall behind the water heater to the centre of the 90° Bend, and
   - Then, where the flue is expected to penetrate the wall, mark the vertical distance up from the floor and the horizontal distance out from the wall measured from the previous steps.



   Note: If the flue is to have an additional one or two horizontal changes of direction, then it is not necessary to measure or mark the horizontal distance from the wall behind the water heater to the centre of the 90° Bend.

   - Alternatively, using a level, run from the top of the 90° Bend to a location horizontal on the wall where the flue will penetrate and mark this point on the wall
   - Measure the horizontal distance, along the proposed flue route, from the end of the 90° Bend to the where the flue is to penetrate the wall.

     Divide this measurement by 50 to calculate the vertical distance fall of the flue (allowing for a 1 in 50 fall).
   - Measure this distance down from the previous mark placed on the wall.

     This point will be the top of the flue termination hole and the flue will have a gradient of 20 mm per metre of length towards the terminal.

   Note: Ensure there are no studs, noggins, pipes or electrical cables located in the wall where the flue is to penetrate

4. Carefully remove the template inserted as the middle pages of this installation instructions booklet.
   - Cut along the middle of the **bold** circle marked “Cut Line”.
5. Align the top of the circular template with the mark on the wall.
   - It may be convenient to tape the template to the wall.
6. Mark the pilot hole through the centre of the template and scribe around the template onto the wall.

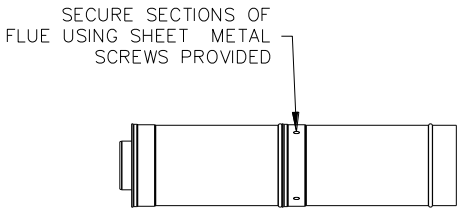
   The scribed circle should be 150 mm in diameter.
   - Remove but **DO NOT DISCARD** the template, repeat for each water heater.
7. Drill a pilot hole using a 6.5 mm diameter or smaller drill bit.

   The drill bit must be long enough to penetrate completely through the outer skin of the external wall.

   Note: Ensure the drill remains level and straight during this step.
8. Align the centre of the template with the pilot hole on the outside wall surface and scribe around the template onto the wall.

   The scribed circle should be 150 mm in diameter.
   - Remove the template.
9. Drill or cut the flue termination hole through the wall using a cutting tool suitable for the wall construction.

   Note: The Trim Ring (PN 295125) will cover a 150mm diameter hole.
10. Starting from the 90° Bend and working towards the terminal location, connect all of the other flue system components.
    - Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.
11. Secure each flue component using the sheet metal screws provided.
12. Support horizontal sections at a distance no greater than 2 m using a Wall Bracket (PN 295129).



13. A horizontal run of flue connecting directly to a Horizontal Flue Terminal must have a downward gradient to the flue terminal.
    - Use Male to Male and Female to Female Adapters to reverse the direction of flue insertion where three or more sections of flue are used in a horizontal flue run and the flue drains toward the flue terminal. Refer to the diagram on page 37.

      This provides for proper draining of condensate without pooling at the flue component joins.
14. A horizontal run of flue between two bends, where the bend closest to the flue terminal is **orientated upward**, must have a gradient upward in the direction of the flue terminal.

    Note: A Condensate Trap and condensate drain line must be installed if the flue has a gradient upward in the direction of the flue terminal. Refer to step 22.
15. The Adjustable Straight Length (PN 295127) may be required if a special length is required between offsets or changes in direction of the flue or to ensure the outer skin of the Horizontal Flue Terminal extends a minimum of 75 mm from the face of the external wall.
    - The Adjustable Straight Length can be adjusted from 560 mm to 890 mm by pulling on its end to increase its length or pushing on its end to decrease its length.
16. Fit a Trim Ring over the last section of flue prior to penetrating the wall.

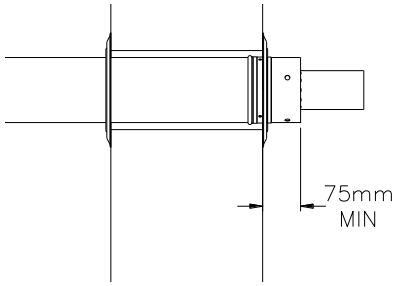
17. Once the flue is assembled and penetrating the wall, install the Horizontal Terminal and secure the termination to the flue using the sheet metal screws provided.

    Note: If the flue terminal position is more than 1800 mm above a safe working surface, then suitable equipment will be required to enable safe access to fit the flue terminal.

    Alternatively, the flue terminal may be fitted to the flue assembly prior to the assembly penetrating the wall.

18. Make a final adjustment to the Adjustable Straight Length, if required, to ensure the end of the outer skin of the flue terminal extends a minimum of 75 mm from the face of the external wall.

    - Firmly tighten the compression band on the Adjustable Straight Length to prevent the pipe from extending or compressing its length over time.



19. Apply an adequate bead of sealant around the flue assembly and exterior wall of the building, using a general purpose silicone sealant suitable for outdoor application.

    Failure to properly seal the flue penetration through the wall will result in long term damage due to weather conditions.

20. Apply an adequate bead of sealant on the rear face of a Trim Ring, using a general purpose silicone sealant suitable for outdoor application.

    - Fit the Trim Ring over the flue terminal and press against the wall.

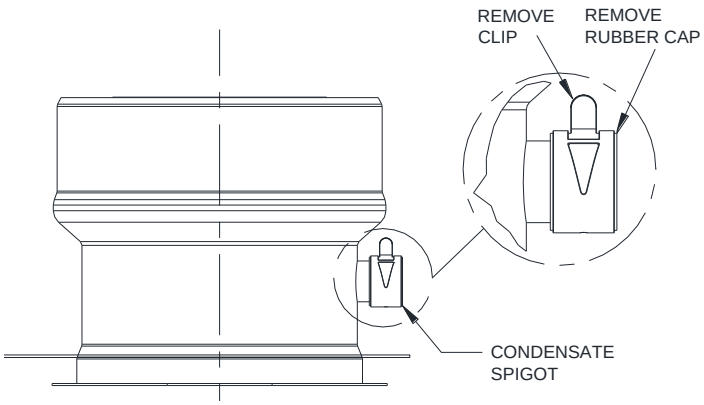
21. Apply an adequate bead of sealant around the flue assembly and interior wall of the building and on the rear face of the Trim Ring, using a general purpose silicone sealant suitable for indoor application.

    Press the Trim Ring against the wall.

22. Connect a Condensate Trap (PN 295139) to the condensate drain spigot on the water heater flue outlet if the flue has a change of direction from horizontal to vertical or if there is a long vertical rise directly from the water heater.

    - Install a condensate drain line to the Condensate Trap.

    Refer to “Draining the Condensate” on page 35 and to “Condensate Trap and Condensate Drain Line” on page 36.



condensate drain spigot

Refer to “Connections – Electrical” on page 49 electrical connection details and “Commissioning” on page 51 for the commissioning details of the water heater.

Vertical Flue Installation
Suitable flashing (not supplied) is required to waterproof the roof penetration.

Notes:

- Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.
- Each flue component is supplied with screws to connect to the adjacent flue component. The screws are located in a bag taped to the outside of the flue component.
- Refer to diagrams:
  - "Typical Installation – Vertical Flue" on page 38, and
  - "Typical Installation – Vertical Terminal with Vertical and Horizontal Sections" on page 38.

To install a vertical flue and termination:

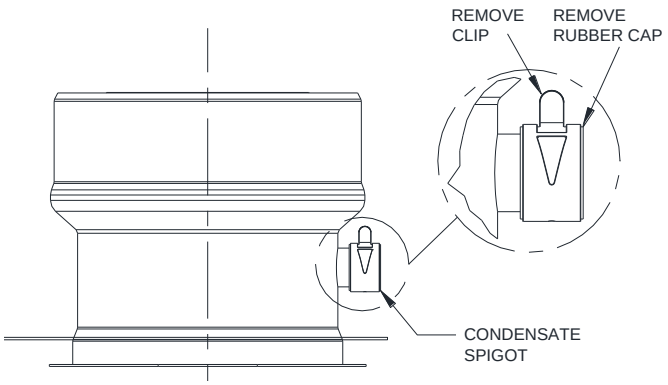
1. Determine the location where the flue will penetrate through the roof.

   Note: Ensure there are no rafters, purlins, pipes or electrical cables located in the roof where the flue is to penetrate.

2. Drill or cut the flue termination holes through the roof and ceiling of a suitable size to allow the installation of the flue, using a cutting tool suitable for the roof construction.

3. Install a Condensate Trap (PN 295139) to the condensate drain spigot on the water heater flue outlet.
   - Install a condensate drain line to the Condensate Trap.

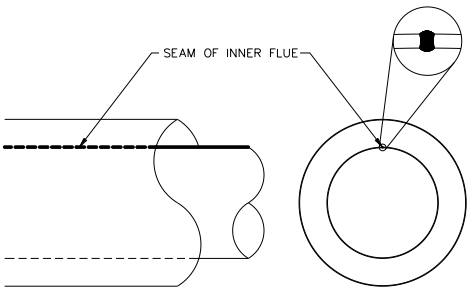
   Refer to "Draining the Condensate" on page 35 and to "Condensate Trap and Condensate Drain Line" on page 36.



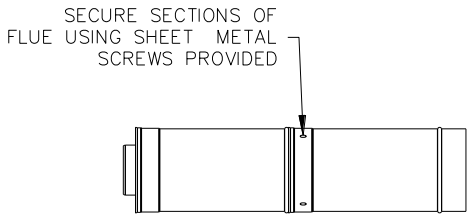
condensate drain spigot

4. Connect the first flue component to the water heater flue outlet.
   - Fit the end of the flue component down over the water heater flue outlet as far as it will go.

     Ensure there is a minimum 35 mm and maximum 42 mm overlap, the rubber seal on the inner flue is well seated and the flue component is fully engaged on the water heater flue outlet.
   - Secure the bend to the outlet with the screws provided.



5. Continuing from the first flue component and working towards the terminal location, connect all of the other flue system components.
   - Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.



6. Horizontal flue runs between bends must have a minimum upward gradient towards the flue terminal of 20 mm per metre.

   Note: Ensure that the seam of the inner flue in horizontal runs is towards the top of the installation.

7. Secure each flue component using the sheet metal screws provided.

8. Fix a Wall Bracket after each transition to a vertical run.

   This is to prevent vertical loading on the bends and offsets.

9. Support vertical sections of flue at a distance no greater than 2 m using a Wall Bracket (PN 295128).

   Note: The Wall Bracket can be used to support vertical sections of flue from a ceiling by rotating the legs through 90°.

10. Install an Adjustable Straight Length (PN 295127) if a special length is required between offsets or changes in direction of the flue.

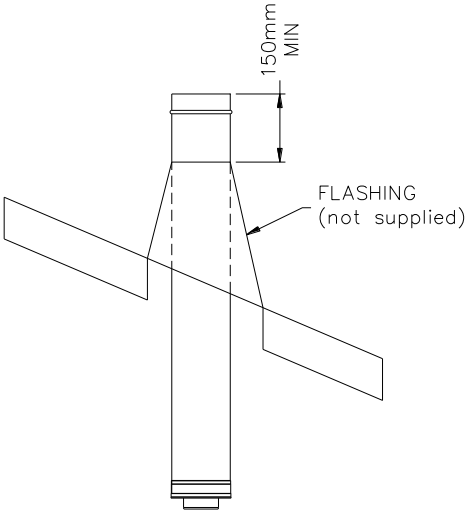
    - The Adjustable Straight Length can be adjusted from 560 mm to 890 mm by pulling on its end to increase its length or pushing on its end to decrease its length.
    - Firmly tighten the compression band on the Adjustable Straight Length to prevent the pipe from extending or compressing its length over time.

11. Fit a Trim Ring over the last section of flue prior to penetrating the ceiling, if one is to be fitted.

12. Once all of the flue components, excluding the Vertical Terminal, have been installed and all supports are securely fastened, the roof flashing must be installed and adequately sealed to prevent rain entry.

    - Cut the flashing to a diameter that allows a snug fit over the flue.
    - Install the roof flashing over the flue and using suitable fasteners, fix to the roof material.

      The flue must extend a minimum of 150 mm through the roof flashing.



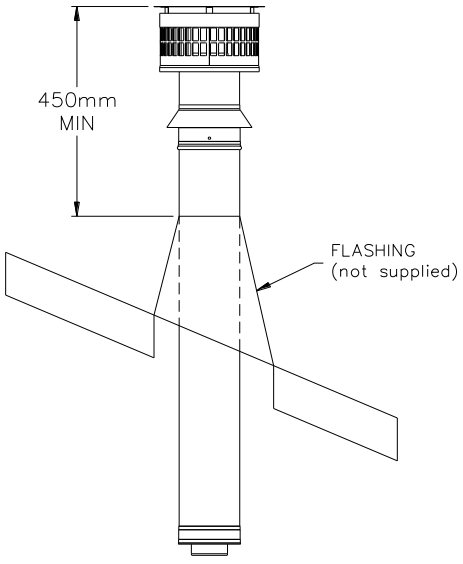
13. Connect the Vertical Terminal (PN 295117) to the flue exiting the roof.

    - Secure the joint with sheet metal screws provided.

    The top of the Vertical Terminal should not be less than 450 mm above the flashing below.

    Observe flue terminal clearances in accordance with AS 5601 or AS/NZS 5601.1. Refer also to “Vertical Flue Terminal Location” on page 34.

    Note: The flue should not extend more than 1.5 m from the roof unless guy wires or other additional support is provided.



14. Apply an adequate bead of sealant around the flue assembly and flashing and around the flashing and roof material, using a general purpose silicone sealant suitable for outdoor application.

    Failure to properly seal the flue penetration through the roof will result in long term damage due to weather conditions.

15. Apply an adequate bead of sealant around the flue assembly and ceiling and on the rear face of the Trim Ring (if fitted), using a general purpose silicone sealant suitable for indoor application.

    Press the Trim Ring (if fitted) up against the ceiling.

16. Upon completion of the secondary flue installation, remove the warning label adhered to the top left hand corner of the water heater’s front panel.

Refer to “Connections – Electrical” on page 49 electrical connection details and “Commissioning” on page 51 for the commissioning details of the water heater.

MULTIPLE WATER HEATER FLUE INSTALLATION

Where multiple water heaters are installed, each water heater must be individually flued to the outside. A common flue system **MUST NOT** be used.

For a multiple unit installation, the water heater is certified for installation with zero clearance between adjacent water heaters.

If the water heaters are mounted on a wall, although they are certified for installation with zero clearance between them, it may be necessary to leave a suitable space of a minimum 175 mm between each water heater if a Condensate Trap and condensate drain line is to be installed. The Condensate Trap and condensate drain line would located between each water heater with the common drain manifold positioned below the water heaters. Refer to "Multiple Water Heater Condensate Trap and Condensate Drain Line Installation" on page 47.

Refer to "Flue Terminal Location" on page 34 for flue terminal clearances from other objects in accordance with AS 5601 or AS/NZS 5601.1.

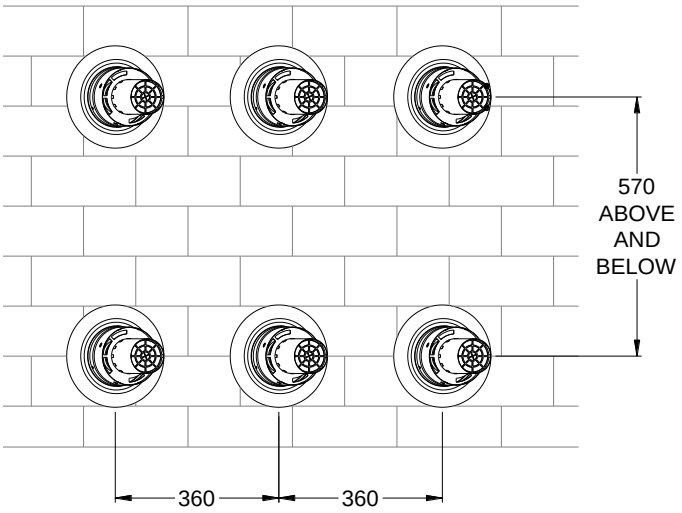
Follow the relevant instructions pertaining to the type of flue installation, with the following additional requirements in relation to flue terminal clearances to be taken into account. The distances are based on using the coaxial flue system components.

Vertical Flue Terminations

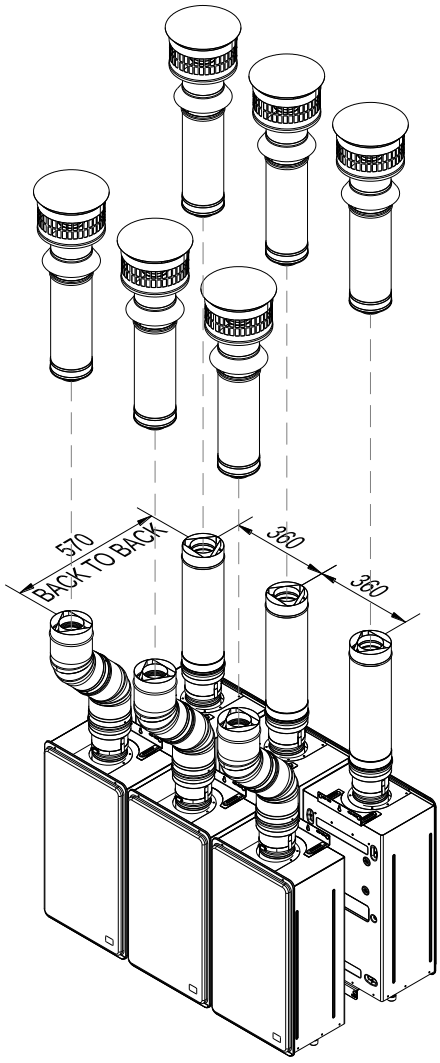
1. The minimum **side by side** centre to centre distance between flue terminals is to be no less than 360 mm.
2. The minimum **back to back** centre to centre distance between flue terminals is to be no less than 570 mm.

Horizontal Flue Terminations

1. The minimum **horizontal** centre to centre distance between flue terminals is to be no less than 360 mm.
2. The minimum **vertical** centre to centre distance between flue terminals is to be no less than 570 mm.



horizontal flue terminations



vertical flue terminations

MULTIPLE WATER HEATER CONDENSATE TRAP AND CONDENSATE DRAIN LINE INSTALLATION

Depending upon the type of installation, it may be necessary to install a Condensate Trap and condensate drain line to each water heater. Refer to "Draining the Condensate" on page 35.

The drain line from each Condensate Trap may be:

- Drained separately to a discharge point, or
- Manifolded together with a single drain line running to a discharge point.

Condensate Traps with Common Drain Line

1. Remove the clamp and rubber cap from the condensate drain spigot on each water heater flue outlet assembly.
2. Locate and install the Condensate Trap in a suitable position adjacent to the water heater.

   Refer to steps 2 to 4 of the procedure outlined in "Condensate Trap and Condensate Drain Line" on page 36.

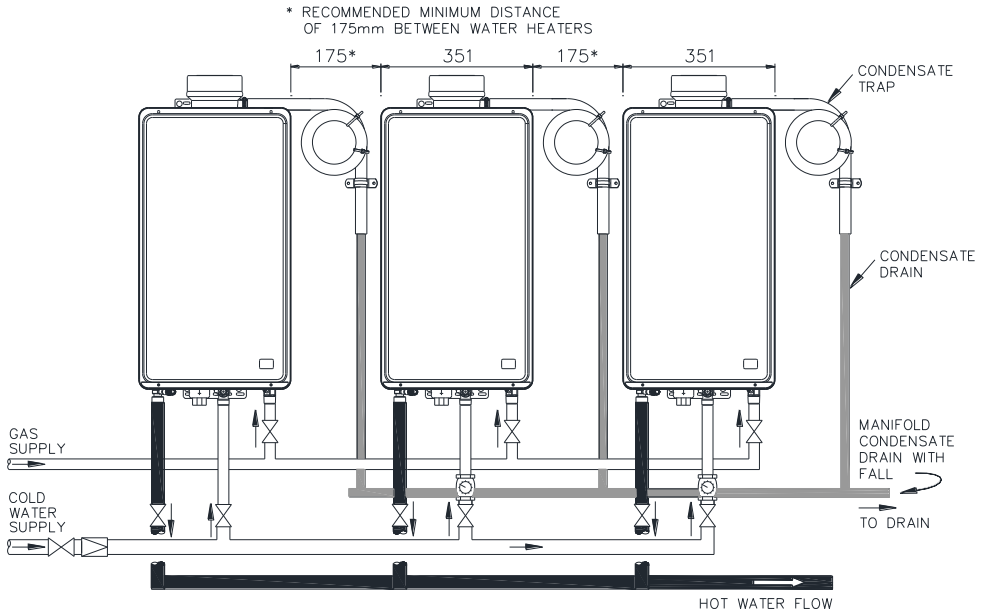
   If the drain line from each Condensate Trap is to be run separately to a discharge point, then proceed to step 3, otherwise continue with step 2.

   Manifold the drain lines from each Condensate Trap into a common header.

   Use UPVC, PE or similar, do not use copper.

   Ensure adequate fall is provided in the header to allow for complete drainage.

   It may be necessary to support the drain line manifold with suitable hangers or clamps.



Condensate drain common manifold

3. Plumb the outlet of each Condensate Trap or the drain line manifold to a suitable discharge point.

   The drain line should be as short as possible, have a continuous fall all the way from the Condensate Trap or drain line manifold to the discharge outlet and have no tap, valves or other restrictions in the pipe work.

Warning: Failure to fill with water may cause flue gasses to escape through the condensate trap. The condensate trap should be regularly checked to ensure it is filled with water, replenishing when required.

Notes
AS/NZS 3500.4 section 5.12 is used as a guide in preparing the following drainage recommendations.

- As the condensate is mildly acidic, copper tube and fittings must not be used as they will corrode.
- Use UPVC (Unplasticised Polyvinyl Chloride) or PE (polyethylene) piping.
- The outlet of the drain line must be in such a position that flow can be easily seen, but arranged so that discharge will not cause injury, damage or nuisance.
- The drain line must not discharge onto electrical connections, earth stakes, copper pipe, concrete paths or into a pond

.

CONNECTIONS – ELECTRICAL

All electrical work and permanent wiring must be carried out by a qualified person and in accordance with the Wiring Rules AS/NZS 3000 and all local codes and regulatory authority requirements.

The water heater will only operate on a sine wave of 50 Hz. Devices generating a square wave cannot be used to supply power to the water heater.

DELUXE MODELS

If a Deluxe model Tankpak Series 2 has been purchased, power supply for each CFWH is factory supplied on the assembly via the controller.

STANDARD MODELS

If a Standard model Tankpak Series 2 has been purchased, power supply for each CFWH must be provided by the installer.

Each water heater is supplied with a 1.8 metre lead and plug and requires a 240 V 50 Hz switched general purpose outlet (GPO) to be located within 1.2 metres of the installation. The GPO must be clear of the flue exhaust, draining water, gas supply pipe and water connections. The GPO must be suitable for outdoor installation if installed outdoors.
The power consumption of each CFWH is as follows, with a maximum current draw of 0.75 Amps each:

Power Consumption	Comments
80 Watts	872/862 series - Burner on, anti frost device inactive
175 Watts	872627 (outdoor) - Burner on, anti frost device active
187 Watts	862627 (indoor) - Burner on, anti frost device active

Supply to the GPO's may be from an independent power source or alternatively can be supplied via the Tankpak Series 2 controller GPO 1 and/or GPO 2 terminals.

INDEPENDENT POWER SUPPLY

Wiring must conform to AS/NZS 3000 including the installation of an appropriately sized circuit breaker.

POWER SUPPLY VIA TANKPAK SERIES 2 CONTROLLER

Two sets of terminals, labelled 'GPO1' and 'GPO2', are supplied within the controller enclosure. Each terminal set is capable of supporting up to nine (9) CFWH.

Two cable glands are supplied on the underside of the controller. If cabling is being run in conduit, these can be replaced with conduit glands.

CONTROLLER POWER SUPPLY

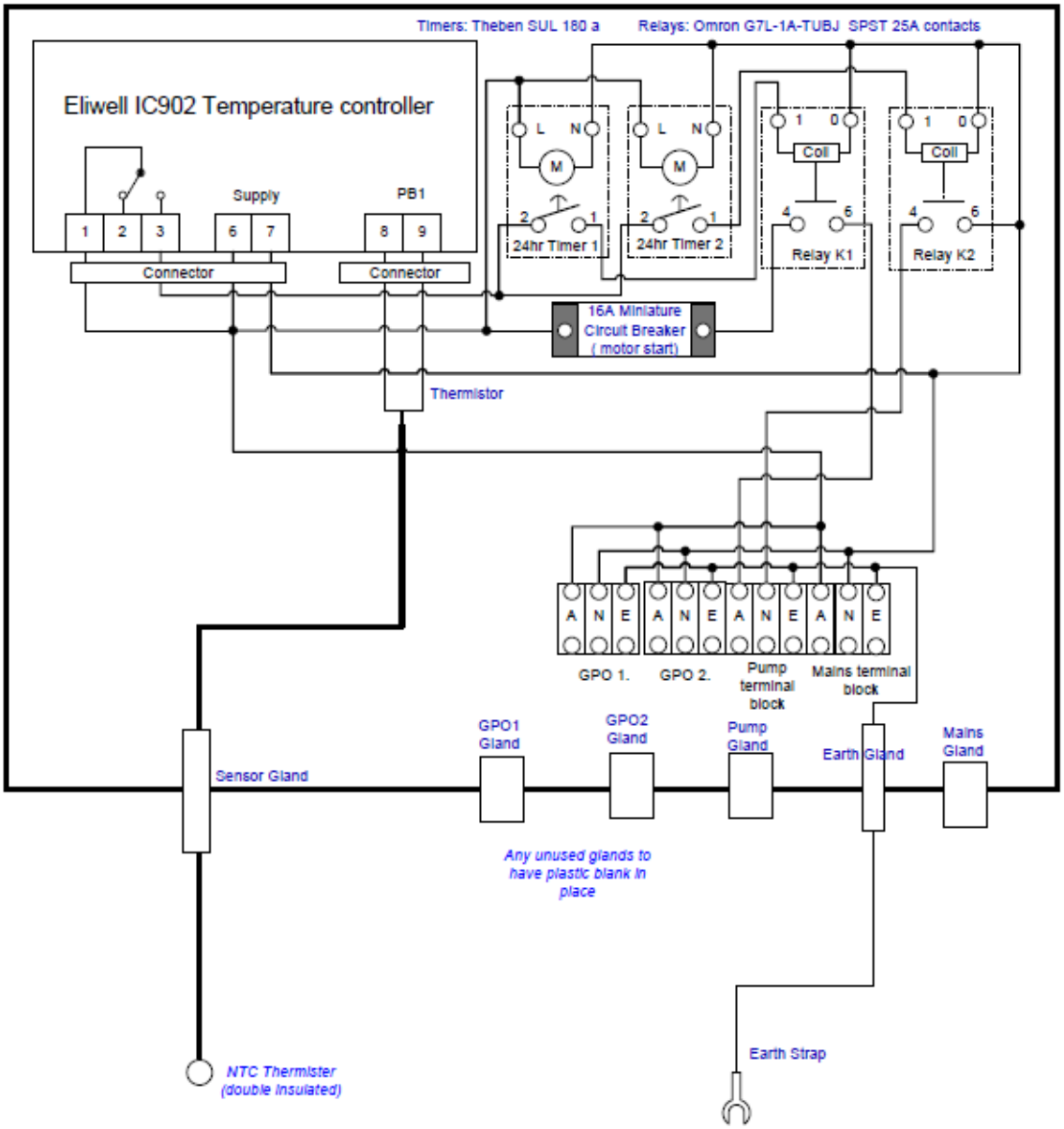
The controller of Tankpak Series 2 models TP02 to TP07 is supplied with a 1.8m plug and lead and may be connected to a 10 amp general purpose outlet. (Deluxe and Standard versions).

The controller of Tankpak Series 2 models TP08 to TP18 must be hard wired to a 240V AC 50 Hz M.E.N. (multiple earthed neutral) mains power supply with an all pole isolating switch installed adjacent to and accessible from the water heater (refer to AS/NZS 5601, clause 5.2.11 or AS/NZS 5601.1:2010 clause 6.2.8). A suitable warning label must be affixed to the water heater if there are additional control circuits not isolated by this switch. This label should direct the service person to the isolation switch for that circuit.

Connect power to the controller at the terminals marked 'Mains Terminal Block'. Circuit size will depend on the purchased system as follows:
Note that any external circuit protection must allow for pump inrush current.

Model Range	Pump Model	Excluding CFWH		Including CFWH	
		Max Current Running (A)	Min Circuit Size (A)	Max Current Running (A)	Min Circuit Size (A)
2 to 4	CM3-2	3	10	6	15
5 to 7	CM5-2	4	10	9	20
8 to 18	CM10-1	5	10	18	30

Earthing requirements including equipotential bonding to be in accordance with AS/NZS 3000 2007 (including Amdt 1/2009-07-30) SECTION 5 - EARTHING ARRANGEMENTS AND EARTHING CONDUCTORS.



Wiring Diagram – Tankpak Controller

COMMISSIONING

INITIAL CHECKS

1. Check that the power supply to the system is switched OFF.
2. Check that an adequate water supply is available to the hot water system.
   Water supply pressure shall not exceed the maximum as stated in the instructions supplied with the storage tank.
3. OPEN cold water inlet valve, hot water outlet valve
   Check all individual water heater isolation valves are OPEN;
4. Check that the system is fully charged, all the air is bled from the system and no leaks are evident.
5. Check the pipe work for leaks
6. OPEN all individual water heater gas isolation valves and purge gas lines.
7. Check the gas pipe work for leaks

To complete the installation, it is necessary to check the gas supply pressure at the inlet to the water heater, the minimum test point pressure and the maximum test point pressure (refer to "Gas Inlet Pressure" on page 51).

Warning: Upon completion of the installation and commissioning of the water heater, leave this guide with a responsible officer. **DO NOT** leave this guide inside of the cover of the water heater, as it may interfere with the safe operation of the water heater or ignite when the water heater is turned on.

GAS INLET PRESSURE

IMPORTANT - CHECK the gas supply pressure at the inlet to the water heater with the water heater and all other gas burning appliances in the premises operating (burners alight). The minimum gas supply pressure range is:

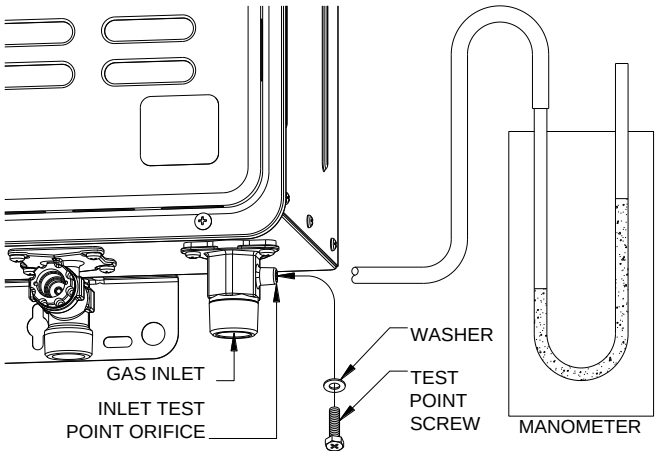
	Natural Gas	Propane
Minimum	1.13 kPa	2.75 kPa
Maximum	3.5 kPa	3.5 kPa

If this minimum cannot be achieved, it may indicate the meter or the gas line to the water heater is undersized. It is important to ensure that an adequate gas supply pressure is available to the water heater when other gas burning appliances, on the same gas supply, are operating.

GAS INLET TEST POINT PRESSURE

To check the gas inlet pressure, select the CFWH at the furthest point in the manifold as the test unit:

1. Ensure the burners are not operating, by turning off the power to the Tankpak or CFWH.
2. Close the gas isolation valve at the gas inlet to the CFWH.
3. Locate the gas inlet test point on the gas connection to the CFWH.
   - Remove the test point screw and washer from the test point orifice.
   - Connect the manometer.
4. Open the gas isolation valve fully at the gas inlet to the CFWH.



5. Observe the gas pressure reading on the manometer.

   If the manometer reading is between the minimum and maximum inlet gas pressure ratings on the rating label, no adjustment is required.

   If the manometer reading is below the minimum inlet gas pressure rating on the rating label, then either the gas pipe to the water heater is undersized and needs to be rectified or adjustment is required at the gas regulator.

   If the manometer reading is above the maximum inlet gas pressure ratings on the rating label, then adjustment is required at the gas regulator.

6. Switch on the electrical supply to the Tankpak or CFWH.

7. If the temperature in the tank is below set point, the Tankpak should start automatically.

8. Observe the gas pressure reading on the manometer.

   If the manometer reading is between the minimum and maximum inlet gas pressure ratings on the rating label, no adjustment is required.

   If the manometer reading is below the minimum inlet gas pressure rating on the rating label, then either the gas pipe to the water heater is undersized and needs to be rectified or adjustment is required at the gas regulator.

   If the manometer reading is above the maximum inlet gas pressure ratings on the rating label, then adjustment is required at the gas regulator.

9. If an adjustment was made during Step 8, repeat this procedure from Step 5.

10. Close the isolation valve on the outlet of the CFWH.

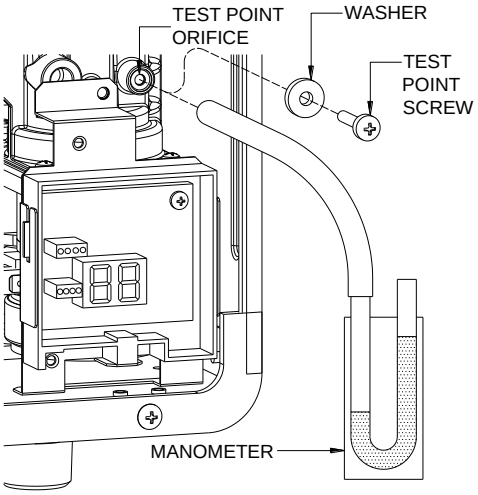
11. Close the gas isolation valve at the inlet to the CFWH.

12. Remove the manometer and refit and tighten the test point screw and washer.

13. Open the gas isolation valve fully at the gas inlet to the water heater.

14. Open the isolation valve again so the burners ignite.

15. Test for gas leaks at the test point.



Warning: The removal of the front panel will expose 240 volt wiring. Take care not to touch wiring terminals.

MINIMUM TEST POINT GAS PRESSURE

Refer to the rating label on the water heater for the minimum test point gas pressure.

1. Ensure the burners are not operating, by turning off the power to the CFWH.

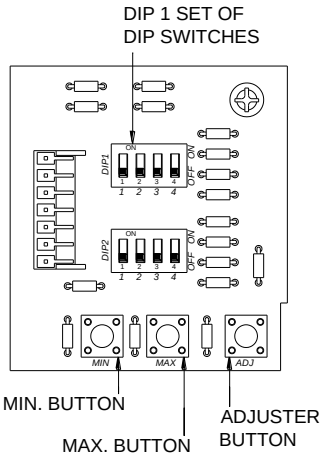
2. Remove the screws holding the front panel to the jacket.

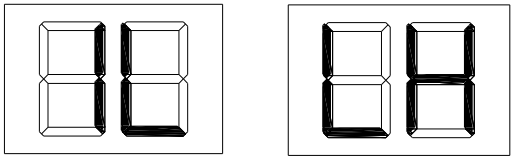
3. Gently disengage the front panel and pull forward to remove from the water heater.

4. Locate the burner pressure test point on the main burner manifold.

   - Remove the test point screw and washer from the test point orifice.
   - Connect the manometer.

5. Switch on the electrical supply at the power outlet to the water heater.





6. Open the gas isolation valve fully at the gas inlet to the water heater, if not already open.
7. Press and hold down the MIN button and observe the reading on the manometer.
    - "1L" is shown on the LED display.
8. Release the MIN button. If the manometer reading observed in step 7 agrees with the rating label, no further adjustment is required.
9. To adjust, press and hold the adjuster button.
    - "LH" is shown on the LED display.

    Note: The adjuster button must be held down continuously through steps 9 to 11.
10. Press and hold the MIN button and observe the reading on the manometer.
    - The manometer reading will change as the test point gas pressure adjusts.

    Note: While the MIN button is pressed, the gas pressure will at first increase then decrease, cycling between an upper gas pressure limit (39 on the LED display) and a lower gas pressure limit (01 on the LED display).
11. Release the MIN button when the reading on the manometer agrees with the rating label.
12. Release the adjuster button.

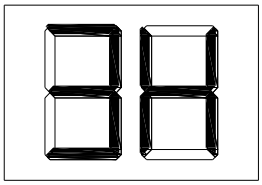
Notes:

- If the burners extinguish and error code 11 or 12 starts to flash on the LED display:
    - release the MIN and adjuster buttons
    - close the CFWH isolation valve
    - clear the error code (refer to "Clearing Error Code" on page 53)
    - recommence the procedure from Step 7
- If the adjuster button is released before Step 11, clear any error code (if displayed) and recommence the procedure from Step 7.

MAXIMUM TEST POINT GAS PRESSURE

Refer to the rating label on the water heater for the maximum test point gas pressure.

Follow Steps 1 to 12 of the "Minimum test point gas pressure" procedure on page 53, but open the hot tap fully and use the MAX button instead of the MIN button. It may be necessary to open two or three hot taps fully, depending upon the model of water heater and the incoming cold water temperature.



Note: In Step 7, "3H" (027 models) will be shown on the LED display.

After setting the minimum and maximum test point gas pressures:

- Close the outlet isolation valve.
- Remove the manometer and refit and tighten the test point screw and washer.
- Open the isolation valve again so the burners ignite.
- Test for gas leaks.
- Refit the front panel and screws to the water heater.

CLEARING ERROR CODE

If an error code does appear on the LED display during the commissioning process, it will be necessary to clear the error in order to complete the installation.

To clear an error code:

- switch off the electrical supply at the power outlet to the water heater
- check the gas isolation valve at the gas inlet to the water heater is fully open
- wait five (5) minutes
- switch on the electrical supply at the power outlet to the water heater

NOTE: If min/max pressure adjustments were required on the test heater it may be necessary to test all water heaters individually.

PRESET OUTLET TEMPERATURE SETTING

The Tankpak Series 2 controller is factory set to 65^{o}C and the continuous flow water heaters are set to 70^{o}C.

It is usually not necessary to check or adjust the factory preset outlet temperature setting of the water heater, unless the customer or application has a particular requirement for this to be done.

For applications requiring sanitising temperatures, such as a commercial kitchen, it will be necessary to adjust the preset outlet temperature setting of the CFWH and the controller to achieve and maintain sanitising temperatures up to 82°C. Refer to page 54 for details.

If the water heater is installed as part of a circulated hot water flow and return system in a building, the preset outlet temperature setting must be set to at least 60°C. If the water temperature decreases by more than 5°C through a circulated hot water flow and return system due to heat loss in the ring main, the preset outlet temperature setting of the water heater should be set to at least 65°C.

GAS BOOSTER FOR A SOLAR WATER HEATER

Note: AS 3498 requires that a water heater provides the means to inhibit the growth of Legionella bacteria in potable water. When this water heater is used as an in-series booster for a solar water heater it can satisfy this AS 3498 requirement provided it is energised and the booster preset outlet temperature setting is 70°C or higher.

Note

- Consideration must be given to the delivery temperature to any ablution and public areas such as a bathroom, ensuite or public amenities. Refer to “Hot Water Delivery” on page 23.

MODIFYING THERMOSTAT SETTINGS

Tankpak Series 2 is factory supplied pre-set to deliver 65^{o}C.

The parameters of the operating thermostat (Eliwell IC902) and continuous flow water heaters may need to be reprogrammed to achieve the desired system operating temperature should it differ from the factory setting.

Refer to the table and instructions on page 54 to 55 for instructions on adjusting the temperature setting.

System Operating Temperature (^{o}C)	CFWH Thermostat Setting (^{o}C)	Eliwell Thermostat Set Point (^{o}C)	Eliwell Thermostat Differential (^{o}C)
60	65	60	3
65	70	65	3
70	75	70	3
75	82	75	3
80	82	80	3

MODIFYING TANKPAK CONTROLLER THERMOSTAT SETTINGS

Note: if no buttons are pressed for 15 seconds, settings are not saved and display will revert to show the previous page.

Set Point:

Press and release **set** key. **'SET'** will be displayed.

Press **set** key again to display the pre-programmed value.

Use ▲ and ▼ arrows to modify set point to the desired temperature.

Press **set** key again to confirm selection.

Press **fnc** key to return to normal operating mode. The current sensed temperature will be displayed.

Differential:

Press and hold **set** key for 5 seconds. **'CP'** will be displayed.

Press the **set** key, **'diF'** will be displayed.

Press **set** key again to display the current differential setting (default 2^{o}C)

Use ▲ and ▼ arrows to adjust the value to the desired differential.

Press **set** key again to confirm selection. **'diF'** will be displayed.

Press **'fnc'** key **twice** to return to normal operating mode. The current sensed temperature will be displayed.

Heat/Cool Mode:

The thermostat should be factory set to heating mode, to check;

Press and hold **set** key for 5 seconds. **'CP'** will be displayed.

Press the **set** key, '**diF'** will be displayed.

Press and release ▲ arrow **3** times. **'HC'** will be displayed.

Press and release **set** button. **'H'** should be displayed to denote that the thermostat is in heat mode.

If **'C'** is displayed, press and release the ▲ arrow to modify setting to **'H'**.

Press **set** key to confirm selection. **'HC'** will be displayed.

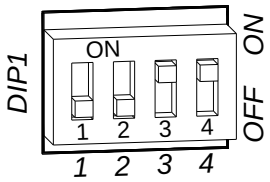
Press **'fnc'** key **twice** to return to normal operating mode. The current sensed temperature will be displayed

TO CHECK OR ADJUST THE PRESET OUTLET TEMPERATURE SETTING OF THE CONTINUOUS FLOW WATER HEATERS

The temperature settings will be displayed on the LED display. The preset outlet temperature settings are:

- 872 / 862 series:

  38°C, 40°C, 42°C, 43°C, 45°C, 50°C, 55°C, 60°C, 65°C, 70°C, 75°C, 82°C

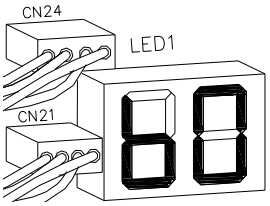


It is necessary to have the electrical supply to the water heater switched on during stages of checking or adjusting the preset outlet temperature setting procedure.

⚠ **Warning:** The removal of the front panel will expose 240 volt wiring. Take care not to touch wiring terminals. The adjustment must be carried out by a qualified person.

⚠ **Warning:** This procedure will involve the adjustment of dip switches. Adjustment of a dip switch should only be made with an insulated tool.

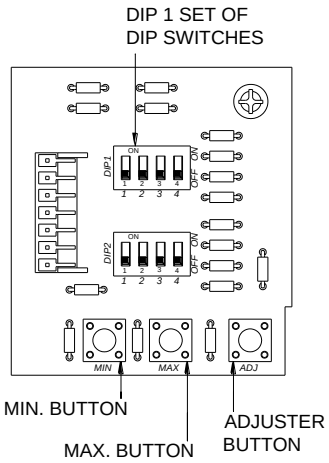
To check or adjust the preset outlet temperature setting:



1. Switch off the electrical supply at the power outlet to the water heater.
2. Remove the screws holding the front panel to the jacket.
3. Gently disengage the front panel and pull forward to remove from the water heater.
4. Switch on the electrical supply at the power outlet to the water heater.
5. Switch dip switches 3 and 4 to the on (up) position on the DIP 1 set of DIP switches on the I.C. Board.

   The current preset outlet temperature setting will show on the LED display.

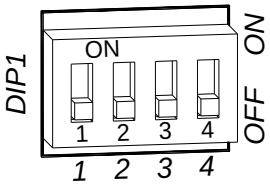
   If the temperature displayed on the LED display is the desired preset outlet temperature setting, then proceed to step 7, as no further adjustment is necessary.



6. Press the MAX button to increase or the MIN button to decrease the preset outlet temperature setting.

   Each press of the MAX or MIN button will increase or decrease the preset temperature by one increment.

   The MAX and MIN buttons are located underneath the DIP 1 and DIP 2 set of DIP switches.



   872 / 862 series
   The increments are 38, 40, 42, 43, 45, 50, 55, 60, 65, 70, 75, 82.

   Set the LED display to 82 if it is required to deliver sanitising temperatures.

7. Switch dip switches 3 and 4 to the off (down) position.

   The LED display will go blank. The preset outlet temperature setting is now set.

8. Switch off the electrical supply at the power outlet to the water heater.
9. Refit the front panel and screws to the water heater.

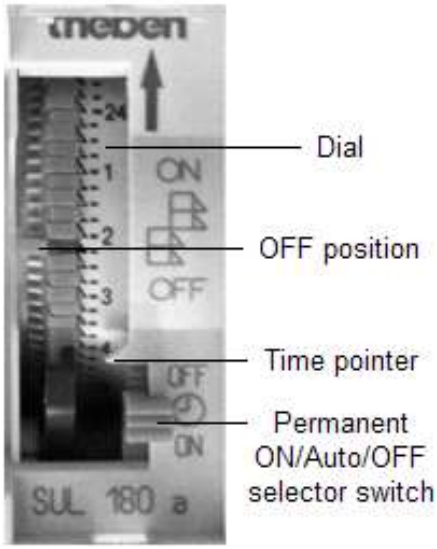
TIMER SETTING

The Tankpak controller is supplied with two dial timers. These are supplied to ensure the CFWH is deactivated for a period each day regardless of any off time due to temperature.
The timers are factory set to deactivate the CFWH at 2:00am (3:00am during daylight saving time) for 15 minutes, ensuring the CFWH is out of operation during the quietest time of the night.
The timers have a 3 day battery backup, however MUST be set during the commissioning stage after electricity, water and gas are available to the system.

Note: The timer is graduated in 24 hour time.

To set the timers:

1. Using your fingernail or a small flat bladed screwdriver, lever the 2:00 ~ 2:15 blue segment on the timer dial to the left position (OFF position as depicted in the illustration shown opposite)
2. Rotate timer dial in direction of arrow until time pointer aligns with current time
3. Ensure permanent ON/Auto/OFF selector switch is set on Auto(◴ position)
4. Repeat for timer 2
5. ⚠ **The permanent ON/Auto/OFF selector switch on both timers MUST be set on the Auto (◴ position) for the system to operate as designed.**



TO TURN OFF THE WATER HEATER

If it is necessary to turn off the water heater on completion of the installation, such as on a building site or where the premises is vacant, then:

- Switch off the electrical supply at the isolating switch to the Tankpak (refer to note below).
- Close the gas isolation valve at the inlet to the Tankpak.
- Close the cold water and hot water flow isolation valves at the inlet and outlet of the Tankpak
- Close the isolation valves on the inlet and outlet at the storage tank(s).
- Drain each CFWH if there is a risk of freezing conditions occurring (refer to “Draining The Water Heater” on page 57).

Notes:

- The frost protection system will be rendered inoperable if electrical power is not available at the water heater.
- Damage caused by freezing due to the unavailability of power at the water heater is not covered by the Rheem warranty (refer to “Terms of the Rheem Warranty” on page 63).
- If the power has been switched off to the water heater and there is a risk of freezing, then it is necessary to drain the water heater (refer to “Draining the Water Heater” on page 57).

DRAINING THE WATER HEATER

To drain the water heater:

- Turn off the water heater (refer to “Turn Off The Water Heater” on page 7).
- Unscrew the two drain plugs, one each at the cold water inlet and hot water outlet, on the underside of each continuous flow water heater.

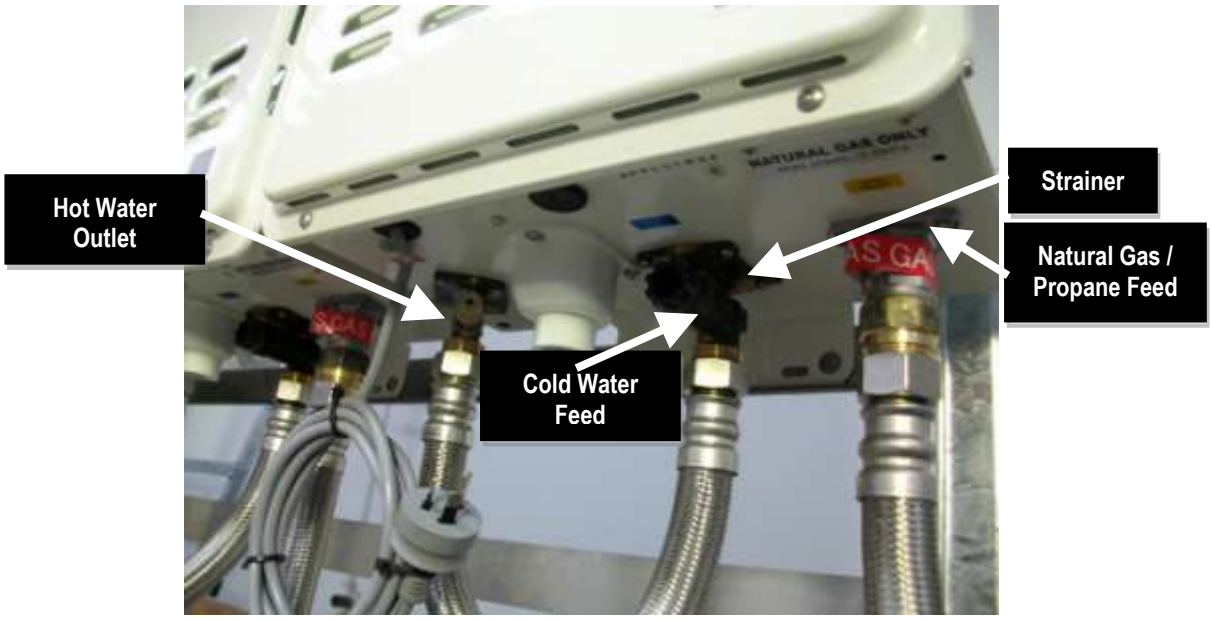
  Water will drain from the water heaters.

Note: It is recommended not to screw the drain plugs back in, until the water heater is to be turned on again.

FINAL CHECKS

1. Check system for any leaks (gas and water)
2. Turn system 240V AC power OFF.
   - Isolate main water valves
   - Check and clean strainers on each of CFWH cold water inlet and pump inlet.
3. Advise customer to check strainers after 1 week usage.
   - Continue to check strainers on a weekly basis until they inspect clean.
   - Continue to check strainers on a monthly basis until they inspect clean.
   - Continue to check strainers on a Quarterly basis until they inspect clean.
   - Thereafter check every six (6) months.
4. Open all isolating valves
5. Turn power ON.
6. Fill in commissioning sheet (refer gage 59). Rheem Tankpak can now be left on line.

Finish.



TANKPAK SERIES 2– COMMISSIONING SHEET

Customer :

Project and Address:

Package Details:

Installation	OK	Comments
Overall installation?		
Flueing ventilation requirements?		**Compliance to AS/NZS5601 is mandatory**
Co-axial Flueing		**Compliance to AS/ZNS5601 is mandatory** **Refer: Flueing page 32**
Tank manifolding correct		
		Refer to page 22 and storage installation instructions
Fuel: Natural Gas / LPG		
Gas pressure during full load operation?		**Natural Gas: 1.13 minimum & 3.5 kPa maximum** **Propane: 2.75 minimum & 3.5 kPa maximum**
Inlet Water Pressure		
Inlet water pressure?		**Minimum 350 kPa & up to 800 kPa (Tank dependant)**
Valves		
All the valves are in open position?		
System		
All water heater operations?		
System temperature satisfactory?		
Comments		
Controller setting CFWH setting		

Client to carry out regular preventative maintenance as below:
water heater inlet strainers & system inlet strainer
Check & clean as per the schedule – **Refer Steps 2 & 3 of Page 59 - Commissioning – Final Checks**

Sign Off

System Commissioned By:	**Customer's Representative:**
Date:	**Date:**

TANKPAK – FAULT FINDING PROCEDURE

TROUBLE SHOOTING

When a complaint is lodged about the performance of a hot water system there are a number of causes that should be checked and eliminated. In an attempt to pinpoint the most likely cause it is important to discuss with the customer their reasons for the complaint, the duration of the problem, any change in circumstances or usage. This information in conjunction with the following listed common complaints will assist you in locating the most likely cause.

Fault	Possible Causes	Description & Recommended Corrective Action
No hot water	Gas Failure	• Check gas supply and reinstate
	Power Failure	• Check and reinstate power supplies to all the power outlets.
	Water Supply Failure	• Check adequate cold water supply is available to all CFWH & no valves are shut. • Check for minimum 350kPa water supply pressure available. • Check CFWH and inlet strainers for cleanliness
	Primary Circuit	• Check plumbing of primary circuit is as per instructions. If the storage tank is not in relative close proximity to the CFWH, or there are more than 8 bends in the primary circuit, or piping is undersized, this may have an impact on primary pump performance. CFWH ‘ok monitor’ can be set to read flow rate through each CFWH. Refer to Rheem Service
	CFWH Fault	• Note error code on ‘OK’ monitor of CFWH and contact Rheem Service
Long delay for hot water supply	Recirculation Pump Fault	• Check secondary circulator • Is the secondary circulator sized correctly for the flow and return design? • Check balancing valves settings (if installed)
No digital display		• Power outage • Loose or open circuit wiring • Thermostat faulty • Direct sunlight on LCD
Probe failure	E1 error (IC901 controller)	• Temperature probe lead has been severed. • Temperature probe connections at thermostat terminals have broken/disconnected. • Temperature probe is damaged/faulty
Water too hot	Thermostat probe not sensing temperature	• Ensure the operating thermostat temperature probe is fully inserted into cylinder temperature sensing well and is unhindered in its ability to accurately sense the cylinder temperature.

This page is left intentionally blank

This page is left intentionally blank

RHEEM CONTINUOUS FLOW GAS WATER HEATER WARRANTY – AUSTRALIA ONLY

CONTINUOUS FLOW GAS WATER HEATER TANKPAK SERIES 2 MODELS TP02-TP18

1. THE RHEEM WARRANTY – GENERAL

1.1 This warranty is given by Rheem Australia Pty Limited ABN 21 098 823 511 of 1 Alan Street, Rydalmere New South Wales, the supplier of Rheem continuous flow gas water heaters, manufactured by Paloma Co., Ltd., a world leader in water heater technology and manufacture.

1.2 Rheem offer a trained and qualified national service network who will repair or replace components at the address of the water heater subject to the terms of the Rheem warranty. Rheem Service, in addition can provide preventative maintenance and advice on the operation of your water heater. The Rheem Service contact number is available 7 days a week on 131 031 with Service personnel available to take your call from 8am to 8pm daily (hours subject to change).

1.3 For details about this warranty, you can contact us on 131 031 or by email at warrantyenquiry@rheem.com.au (not for service bookings).

1.4 The terms of this warranty and what is covered by it are set out in section 2 and 3 and apply to water heaters manufactured after 1st April 2013.

1.5 If a subsequent version of this warranty is published, the terms of that warranty and what is covered by it will apply to water heaters manufactured after the date specified in the subsequent version.

2. TERMS OF THE RHEEM WARRANTY AND EXCLUSIONS TO IT

2.1 The decision of whether to repair or replace a faulty component is at Rheem's sole discretion.

2.2 Where a failed component or cylinder is replaced under this warranty, the balance of the original warranty period will remain effective. The replacement does not carry a new Rheem warranty.

2.3 Where the water heater is installed outside the boundaries of a metropolitan area as defined by Rheem or further than 25 km from either a regional Rheem branch office or an Accredited Rheem Service Agent's office, the cost of transport, insurance and travelling between the nearest branch office or Rheem Accredited Service Agent's office and the installed site shall be the owner's responsibility.

2.4 Where the water heater is installed in a position that does not allow safe or ready access, the cost of that access, including the cost of additional materials handling and/or safety equipment, shall be the owner's responsibility. In other words, the cost of dismantling or removing cupboards, doors or walls and the cost of any special equipment to bring the water heater to floor or ground level or to a serviceable position is not covered by this warranty.

2.5 This warranty only applies to the original and genuine Rheem water heater in its original installed location and any genuine Rheem replacement parts.

2.6 If the water heater is not sized to supply the hot water demand in accordance with the guidelines in Rheem's water heater literature, any resultant fault will not be covered by the Rheem warranty.

2.7 The Rheem warranty does not cover faults that are a result of:

a) Accidental damage to the water heater or any component (for example: (i) Acts of God such as floods, storms, fires, lightning strikes and the like; and (ii) third party acts or omissions).

b) Misuse or abnormal use of the water heater.

c) Installation not in accordance with the Owner's Guide and Installation Instructions or with relevant statutory and local requirements in the State or Territory in which the water heater is installed.

d) Connection at any time to a water supply that does not comply with the water supply guidelines as outlined in the Owner's Guide and Installation Instructions.

e) Repairs, attempts to repair or modifications to the water heater by a person other than Rheem Service or a Rheem Accredited Service Agent.

f) Faulty plumbing or faulty gas or power supply.

g) Failure to maintain the water heater in accordance with the Owner's Guide and Installation Instructions.

h) Transport damage.

i) Fair wear and tear from adverse conditions (for example, corrosion).

j) Cosmetic defects.

k) Ice formation in the waterways of a water heater: where the electricity supply has been switched off or has failed and the water heater has not been drained in accordance with the instructions; or due to an ambient temperature below -20°C (including wind chill factor).

2.8 If you require a call out and we find that the fault is not covered by the Rheem warranty, you are responsible for our standard call out charge. If you wish to have the relevant component repaired or replaced by Rheem, that service will be at your cost.

2.9 Subject to any statutory provisions to the contrary, this warranty excludes any and all claims for damage to furniture, carpet, walls, foundations or any other consequential loss either directly or indirectly due to leakage from the water heater, or due to leakage from fittings and/ or pipe work of metal, plastic or other materials caused by water temperature, workmanship or other modes of failure.

3. WHAT IS COVERED BY THE RHEEM WARRANTY FOR THE WATER HEATERS DETAILED IN THIS DOCUMENT

3.1 Rheem will repair or replace a faulty component of your water heater if it fails to operate in accordance with its specifications as follows:

3.2 For storage tank warranty, refer to storage tank Owners Guide

What components are covered	The period in which the fault must appear in order to be covered	What coverage you receive
All components	Year 1	Repair and/or replacement of the faulty component, free of charge, including labour.
CFWH (only if the water heater is installed in a single-family domestic dwelling with a preset outlet temperature setting not exceeding 75^{o}C)	Years 2 & 3	Repair and/or replacement of the faulty component, free of charge, including labour.
The heat exchanger (if water heater is installed in a single-family domestic dwelling with a preset outlet temperature setting not exceeding 75^{o}C)	Years 4 to 10	Replacement heat exchanger, free of charge. Installation and repair labour costs are the responsibility of the owner.
The heat exchanger (if the water heater is installed with a preset outlet temperature setting not exceeding 75^{o}C, and is not installed in a single-family domestic dwelling	Years 2 to 5	Replacement heat exchanger, free of charge. Installation and repair labour costs are the responsibility of the owner.

4. ENTITLEMENT TO MAKE A CLAIM UNDER THIS WARRANTY

4.1 To be entitled to make a claim under this warranty you need to:

a) Be the owner of the water heater or have consent of the owner to act on their behalf.

b) Contact Rheem Service without undue delay after detection of the defect and, in any event, within the applicable warranty period.

4.2 You are **not** entitled to make a claim under this warranty if your water heater:

a) Does not have its original serial numbers or rating labels.

b) Is not installed in Australia.

5. HOW TO MAKE A CLAIM UNDER THIS WARRANTY

5.1 If you wish to make a claim under this warranty, you need to:

a) Contact Rheem on 131031 and provide owner's details, address of the water heater, a contact number and date of installation of the water heater or if that's unavailable, the date of manufacture and serial number (from the rating label on the water heater).

b) Rheem will arrange for the water heater to be tested and assessed on-site.

c) If Rheem determines that you have a valid warranty claim, Rheem will repair or replace the water heater in accordance with this warranty.

5.2 Any expenses incurred in the making of a claim under this warranty will be borne by you.

6. THE AUSTRALIAN CONSUMER LAW

6.1 Our goods come with guarantees that cannot be excluded under the *Australian Consumer Law*. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

6.2 The Rheem warranty (set out above) is in addition to any rights and remedies that you may have under the *Australian Consumer Law*.

RHEEM AUSTRALIA PTY LTD
A.B.N. 21 098 823 511
www.rheem.com.au

FOR SERVICE TELEPHONE
131 031 AUSTRALIA
0800 657 335 NEW ZEALAND